

UNITED STATES BUREAU OF EDUCATION
BULLETIN, 1914, NO. 36

WHOLE NUMBER 610

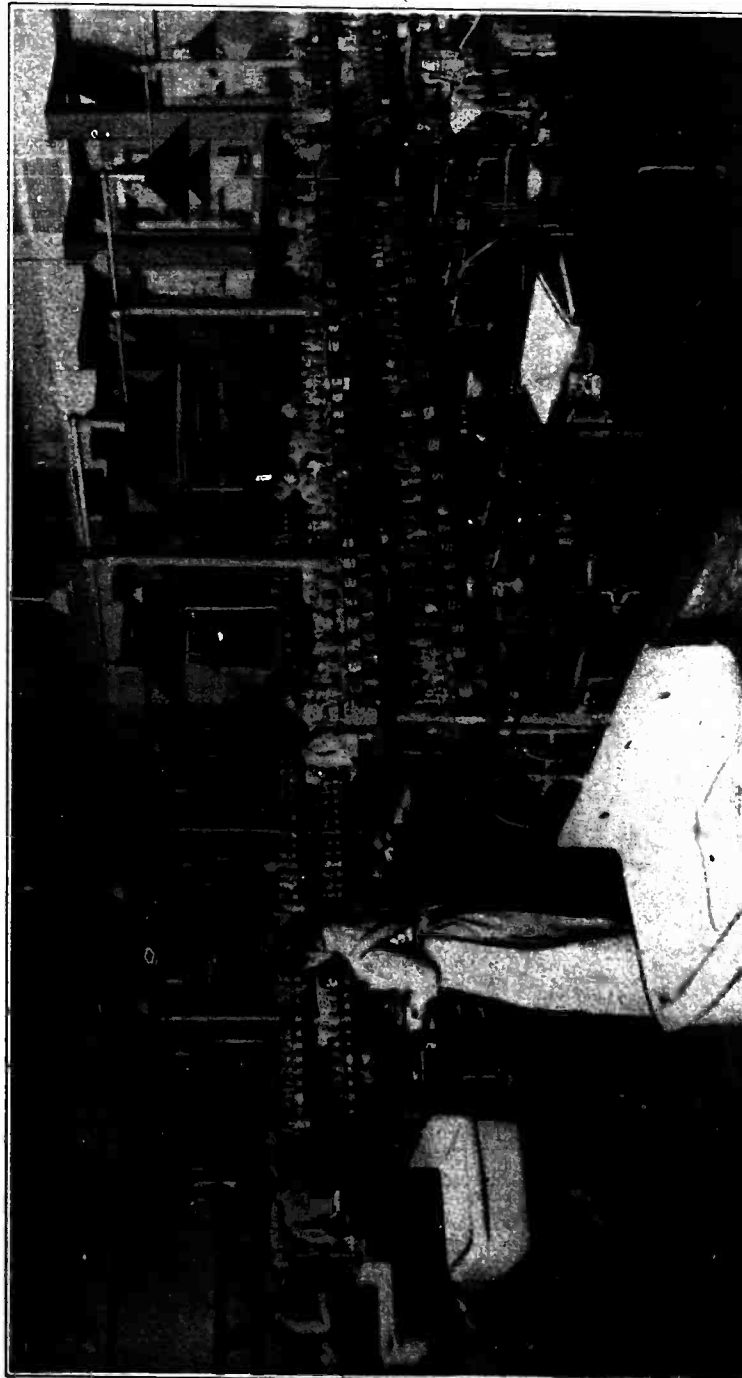
EDUCATION FOR THE HOME

By BENJAMIN R. ANDREWS
ASSISTANT PROFESSOR OF HOUSEHOLD ECONOMICS
TEACHERS COLLEGE, COLUMBIA UNIVERSITY

PART I
INTRODUCTORY SURVEY
EQUIPMENT FOR HOUSEHOLD ARTS



WASHINGTON
GOVERNMENT PRINTING OFFICE
1914



PHYSIOLOGICAL CHEMISTRY LABORATORY DEPARTMENT OF HOUSEHOLD ARTS TEACHERS COLLEGE, COLUMBIA UNIVERSITY, NEW YORK CITY

ADDITIONAL COPIES
OF THIS PUBLICATION MAY BE PROCURED FROM
THE SUPERINTENDENT OF DOCUMENTS
GOVERNMENT PRINTING OFFICE
WASHINGTON, D. C.
AT
10 CENTS PER COPY

▽

CONTENTS.

	Page.
Letter of transmittal.....	5
Introductory survey.....	7
Section 1. The beginnings of an education for the home.....	10
Section 2. The subject matter of home economics.....	22
Section 3. Terminology in education for the home.....	23
Section 4. The aims in education for the home.....	25
Section 5. Methods of teaching in household arts.....	28
Section 6. The kindergarten and the home.....	30
Section 7. The kitchen garden and teaching of household arts.....	31
Section 8. Credit at school for housework done at home.....	33
Section 9. Instruction in household arts without special teachers.....	35
Section 10. Instruction related to the home, for boys and men.....	37
Equipment for education for the home.....	41
Section 1. Equipment for teaching household arts in public schools.....	41
Section 2. Equipment for household teaching in high schools.....	48
Section 3. Equipment in institutions for training teachers—Normal schools.....	50
Section 4. College equipment for home economics.....	51

ILLUSTRATIONS.

	Page.
Plate 1. Physiological chemistry laboratory.....	Frontispiece
2. A, Girls canning club work; B, Warm lunch served in an Iowa district school.....	16
3. A, "Household Arts" in the kindergarten; B, Household arts in the kindergarten.....	16
4. A, The Crete plan; B, High-school tailoring class.....	32
5. A, The visiting dietitian in a city tenement; B, Kitchen in a house-keeping flat.....	32
6. A, Dining room in a home economics building; B, Senior normal cooking (dietetics).....	48

LETTER OF TRANSMITTAL.

DEPARTMENT OF THE INTERIOR,
BUREAU OF EDUCATION,

Washington, September 30, 1914:

SIR: In America at least the home is the most important of all institutions. From it are the issues of life. In the little world of home children are born and reared. In it they grow to manhood and womanhood. From it they go forth into the larger world of society and state, to establish in turn their own little world of the home in which they grow old and die. Their memories linger around the homes of their childhood; the memories of them held by later generations are associated with the homes of their manhood and womanhood. In the home children receive the most important part of their education. In the home must be established their physical, mental, and moral health. The experiences of home constitute the raw material of the education of the schools. The character and the teaching, conscious or unconscious, of the home determine in a large measure their attitude toward all other institutions and toward all the relations of life. From the home parents and older children go forth to their daily toil, and to the home they bring the products or the earnings of their labor, to be expended, wisely and prudently or unwisely and imprudently, for food, clothing, shelter, and the other necessities and luxuries of life. For most people the home is the beginning and end of life. All their activities proceed from it and return to it. Therefore, of all the arts those pertaining to home making are the most important and of all the sciences those which find their application in the home, making us intelligent about the home and its needs, are the most significant.

If the schools are to assist in making us intelligent about the life we live and the work we do, they must provide liberally for instruction in these arts and sciences. Within the last two or three decades, educators and people generally have become conscious of this fact as never before, and gradually the schools are being readjusted to meet the new demands. Probably they have never undertaken a more important or difficult task, and there is constant need for information in regard to methods adopted and results obtained. I, therefore, more than two years ago, asked Benjamin R. Andrews, assistant professor of household economics in the Teachers College of Columbia University, to prepare for this bureau a statement, as full and accurate as possible, of the present status of education for the home in American schools and colleges. This Mr. Andrews

has done, with the help of several of the best-known teachers of this subject in different parts of the country. The manuscript is now ready for publication, and I recommend that it be published in four parts as bulletins of the Bureau of Education, with the general title of "Education for the Home;" Part I—Introductory, Equipment for Household Arts; Part II—The States and Education for the Home, Rural Schools, Elementary Schools, Secondary Schools, Normal Schools, Technical Institutions, Various Organizations and Agencies; Part III—Household Arts in Colleges and Universities; Part IV—Lists of Schools, References.

Respectfully submitted.

P. P. CLAXTON,
Commissioner.

To the Honorable the
SECRETARY OF THE INTERIOR.

EDUCATION FOR THE HOME—PART I.

INTRODUCTORY SURVEY.

Education for the home presupposes that the schools shall add to general education a preparation for various fields of useful service, and among them that of homemaking and household management. Common-school privileges have now been secured for every child; that every child shall also be prepared for efficient vocational service in some chosen field is the program of the new education. This new program will not reduce the present general training of the individual, whether this is now limited to the elementary school, high school, or college. Its fundamental principle is that there shall ultimately be provided, in addition to the general education which the individual now secures, specific vocational training for some definite field of useful activity, whether trade or profession. In such a program, preparation for the management of the home is obviously an important element.

An educational system that gives vocational preparation for the higher professions alone is socially indefensible; such a limitation may be for a time necessary if society can not afford more, but a progressive society can not afford to rest until everyone who serves, whether his station be high or low, is equipped by special training for efficient service. The public is fast adopting this conclusion; extensive programs of vocational training have already taken form in many States and are under consideration elsewhere. The older education, of course, did not entirely lack a vocational element; it led some to the higher professional schools, and those who did not go beyond the lower schools applied the knowledge there secured in business, in the home, and elsewhere. There is, however, a new vocational emphasis to-day in the older education as well as in the education called vocational, and the home is to be one of the chief beneficiaries of this changed point of view.

This report brings together facts regarding education for the home in American schools of various grades from the elementary school to the university, and also statements regarding certain supplementary agencies and organizations whose work is in this field. The particular section of the report presented in this bulletin contains an introduction to the study, brief statements of certain of the findings, and a list of equipment for household-arts work.

A basis for a rational appreciation of the home is laid in the kindergarten, and the kitchen garden has been adopted, especially in social enterprises, as a method of teaching household processes by toys and games; in the public schools and in higher institutions the program of education for the home has been fairly well agreed upon, and is going into effect somewhat as follows:

In the lower grades of the elementary school household arts is to be taught to both boys and girls as part of their general education, but with no vocational aim; in the last grades of the elementary school, vocational training in the household arts will be given to girls whose education is to end with the elementary school, and some required training will be given in these grades to all girls. In the high schools, 1,350 of which now give household instruction, a minimum course in household arts will be required of all girls, whether in college preparatory work or in the various vocational curricula, while vocational courses in household arts or homemaking will be provided for those desiring to secure serviceable efficiency for the field of the household.

For girls who live in the open country equivalent opportunities will be provided, since education for the rural home, including woman's supplementary wage-earning vocations, has been an almost invariable accompaniment of vocational training in agriculture. Household arts is going even into the rural district school. Often the rural teacher provides domestic training in connection with the preparation of a warm lunch; much is done by visiting supervisory teachers; and still more definite progress is made possible by the consolidation of districts. Education for the rural home is benefiting by the establishment of special secondary schools for agricultural and household education, by the organization of the boys and girls of the country in contest clubs, by the development of rural community centers about the schools, and by other progressive measures in the results of which the home shares.

Of the State normal schools two-thirds at least have organized household-arts departments, and over half of these require a minimum amount of instruction in this field of all students intending to teach. The training of special teachers of household arts is provided in many normal schools. In other institutions for preparing teachers, in the city training schools and in training classes in high schools, the subject of household arts is included in the curriculum, so that the regular schoolroom teacher will be prepared to impart something of the arts of living in connection with her regular instruction.

The technical institutes, usually in advance of the secondary schools in their program of vocational courses, have naturally provided vocational courses related to the home. They have contributed much to the training of teachers in this field.

Of the colleges and universities, over 250 report definite courses of instruction in household science, enlisting 7,500 college students; and 37 other institutions which offer no such courses report that related instruction is offered in their scientific departments. The collegiate instruction varies from courses related to the home, offered as elective subjects, to definite curricula in preparation for teaching household arts, for household management and home making, and for industrial and professional applications of household arts, as in institution management, dietetics, lunchroom management, house decoration, costume design and dressmaking, and other fields.

Among the most important items of this program in home education are the plans for reaching the home women with knowledge of better housekeeping. For this the prime agency is the continuation school of household arts, which will provide daytime classes for a few hours a week for young women who have left school and are now at home or in employment, especially also for young matrons and young mothers who need first aid in housekeeping and child care. Similar instruction may be given, though less advantageously, in evening classes. For the mature woman of the open country there seems most promise in the movable schools of homemaking meeting for a week or more in a community, and in the visiting household demonstrator, already foreshadowed by the farm demonstrators and actually at work in one or two places. These agencies will supplement with intensive instruction the work of farmers' institutes for women, the usual extension work of the agricultural colleges, and the various public and voluntary agencies of home improvement. In this connection the Lever-Smith bill just adopted, providing for Federal aid for extension work in home economics and agriculture, has great promise for the development of home-betterment work for the country. In the cities many agencies are working to the same end—the visiting housekeeper and household teacher, the social center, the model housekeeping flat, the settlement, the Young Women's Christian Association, women's clubs, and similar organizations. Some of these agencies—for example, the Young Women's Christian Association—are reaching the country as well as the town.

There remain to be mentioned the Government agencies, other than the schools, which directly benefit the home, as the nutrition investigations and the food-control work of the United States Department of Agriculture, the home-education division of the Bureau of Education, the Children's Bureau, the Public Health Service of the Federal Government, and those administrative divisions of State and municipal governments which aid society by aiding the home; also the many professional, scientific, and social-betterment organizations the purposes of which concern the home.

Section 1. THE BEGINNINGS OF AN EDUCATION FOR THE HOME.

An informal education for the home began with the first home, and the formal training for home duties has probably a greater antiquity than we think. Socrates's unfading picture of the young Greek, Ischomachus, giving directions to his wife, as related for us by Xenophon in the *Oeconomicus*, hints at the home instruction which Greek boys and girls doubtless received, and which any cultivated people must provide if its complex round of household living is to be taken up readily by the new generation. The medieval convents must have been schools of exemplary housekeeping. The placing of young women of better-bred families with some lady of the castle, just as her brother went as page to a school of knighthood, and the training of the daughters of the common folk in service at the hall or court, made something of a school of household work and ways in the Middle Ages. The renaissance of classic learning stimulated housekeeping, as it did everything else, and the Florentine architect, Alberti (or was it Pandolfino?), rewrote Xenophon for his day as the "*Tratto del Governo della Famiglia*," a valued discourse of a father and his sons regarding household wealth and management.

The Renaissance brought in a new society, and its educators, Comenius and Luther especially, found a place in school theory, even if practice did not yet yield ground, for the common activities of home and farm; perhaps the textbooks of Comenius were the first school books to recognize household activities as proper subject matter for school discussions. The philanthropinists of the eighteenth century believed in such training, as did Pestalozzi, a practice that spread to some extent in the philanthropic schools of Germany, the charity schools of England, and in the monitorial systems of Lancaster and Bell. Needlework, as samplers, lace and embroidery, had long been part of the private-school education of girls—as accomplishments, rather than practical arts. The Ursuline nuns at Quebec had taught cooking and sewing to Indian girls as early as 1668. In the American colonies girls had needlework much as in England, but the household as an end in education did not get much of a hearing, in Europe or America, until 1850, or even 1870.

The early domestic economy movement.—The demand for the hearing came nearly 50 years earlier, however, when it was voiced in America by two leaders in girls' education, Mrs. Emma Hart Willard and Miss Catherine E. Beecher. Mrs. Willard had a famous private school for girls at Middlebury, Vt., whence she launched in 1818 her "address" to the New York Legislature pleading for a State grant for girls' education comparable to that given boys' education, which would provide permanence of plan, necessary buildings, equipment,

and faculty. In connection with this plea she outlined her plan of a curriculum that should include "domestic instruction." Mrs. Willard wrote:

It is believed that housewifery might be greatly improved by being taught, not only in practice, but in theory. There are right ways of performing its various operations; and there are reasons why those ways are right; and why may not rules be formed, their reasons collected, and the whole be digested into a system to guide the learner's practice?

Mrs. Willard discovered domestic economy as a subject of instruction; Miss Catherine Beecher developed the idea, and to her we really owe a large debt. Miss Beecher maintained a private school at Hartford, Conn., from 1820 to 1832, and afterwards with her sister, Harriet Beecher Stowe, another school at Cincinnati. Her life work as educator, author of textbooks, and leader in social movements—for women as teachers, for the higher education of women, for moderation in the antislavery crusade, for hygienic and health reforms, for attention to domestic economy, and finally against the suffrage for women—made her a national figure from 1830 until her death, in 1878. She constantly urged a high place for domestic economy in the education of girls. In 1841 she did the practical thing that made its teaching possible; she wrote an excellent text on the principles of household management, which was issued under the title, *A Treatise on Domestic Economy*. The book was republished year after year, was added to the Massachusetts district school library, used as a textbook in schools, and with its companion, *Domestic Receipt Book*, was for a generation the standard work on the household. Even to-day these books, or their revisions, published 1869-1873, *The American Woman's Home*, or *Principles of Domestic Science*, *New Housekeeper's Manual*, etc., by Miss Beecher and her sister, have real worth, concealed though it be in writing already musty with the years. Miss Beecher's logic is still sound, and her statement in the preface of the *Treatise* rings true:

The author of this work was led to attempt it by discovering, in her extensive travels, the deplorable sufferings of multitudes of young wives and mothers from the combined influence of poor health, poor domestics, and a defective domestic education:

The measure which, more than any other, would tend to remedy this evil would be to place domestic economy on an equality with the other sciences in female schools. This should be done because it can be properly and systematically taught (not practically, but as a science, as much so as political economy or moral science, or any other branch of study; because it embraces knowledge which will be needed by young women at all times and in all places; because this science can never be properly taught until it is made a branch of learning; and because this method will secure a dignity and importance in the estimation of young girls which can never be accorded while they perceive their teachers and parents practically attaching more value to every other department of science than this. When young ladies are taught the construction of their own bodies, and all the causes in domestic life which tend to weaken the constitution; when they are taught rightly to appreciate and learn the most convenient

and economical modes of performing all family duties, and of employing time and money; and when they perceive the true estimate accorded to these things by teachers and friends, the grand cause of this evil will be removed. Women will be trained to secure, as of first importance, a strong and healthy constitution, and all those rules of thrift and economy that will make domestic duty easy and pleasant.

In 1852 Miss Beecher founded the American Women's Education Association to secure the establishment of higher schools for women in the West; and such schools were established through the association at Milwaukee, at Dubuque, and elsewhere. In accordance with Miss Beecher's plans these institutions were to have departments for the three essential divisions of women's training—normal training, physical education, and domestic economy. Money was forthcoming for classical training, but not for Miss Beecher's idol, the domestic economy departments; yet her plans for these projected collegiate schools of domestic economy were strikingly prophetic of present institutions and doubtless helped to open the way for the collegiate instruction which began in the West in the seventies.

The scientific interest in the household.—Meantime, parallel to this domestic-economy movement, there had appeared evidence of a scientific interest in household problems. Benjamin Thompson, 1753–1814, an American born at North Woburn, Mass., but living his adult life in Europe as Count Rumford, one of the world's great physicists, especially in problems of heat, devoted much time to scientific studies of domestic problems: The economy of fuels, of kitchen ranges, fireplaces and heating apparatus, of utensils, of various culinary processes, as baking and making soup and coffee. Matters of domestic lighting and ventilation also had the attention of this remarkable man, as did matters of social economy, such as mendicancy, military organization, and agriculture. There can be no doubt that Rumford's example as a scientist who thought the household worthy of serious study has been fruitful. This is certainly true as regards two American scientists, Edward L. Youmans (1821–1887), author of "Household Science," published in 1858, and Ellen H. Richards (1842–1911), "Minder of the home-economics movement" as we know it to-day in American education. Youmans, who was a chemist and afterward founder of the Popular Science Monthly, brought together the contributions of chemistry, physics, and biology which bear upon the household, and out of them created a new subject, "household science," just as Liebig a few years before in Germany had by a similar creation struck out the new discipline of agricultural chemistry. Youmans's work harks back to Rumford; his book is a distinct contribution, however, in presenting in systematic order the scientific explanations of matters of household concern, heat, light, food, air, etc., and it was used for a generation as a textbook in the school work which began soon after its appearance.

The Rumford respect for household matters as worthy the best attention of the scientist appeared again in Ellen Richards, a New England woman, who graduated at Vassar in 1870, entered the Massachusetts Institute of Technology by special permission in 1871 as its first woman student, equipped herself in chemical science until she became a famous sanitary chemist, and served the institute until her death as instructor in this field. During the last 30 years of her life Mrs. Richards interested herself in the applications of science to household problems of food, clothing, and shelter and became leader of the movement for education in this field. Author herself of many books, such as *The Chemistry of Cooking and Cleaning*, *Food Materials and their Adulteration*, *The Cost of Living*, *The Cost of Food*, *The Cost of Shelter*, *The Cost of Cleanness*, *The Art of Right Living*, *Euthenics*, and others; founder with Mr. and Mrs. Melvil Dewey of the Lake Placid Conference on Home Economics, and its chairman from 1899 to 1908; first president of the American Home Economics Association, 1909-1911; leader in social experiments related to the household, such as the New England Kitchen of Boston, 1890, the Rumford Kitchen (a plan for popular dietary teaching at the Chicago Exposition), the service of lunches to high-school students, 1894 (a century-old experiment of Rumford's in Europe), and the "Household Aid Co.," an experiment in furnishing trained household service on call by the hour, 1903-1905; university lecturer and popular speaker on household topics, consultant on institution management, and adviser in health, sanitary, and educational problems—this remarkable woman gave us, as much as any single individual ever gave a social result, our present national conviction of the necessity of education for the home. And perhaps the most remarkable thing about this achievement is that it was the social by-product of a laboratory career in sanitary science.

There are others who have contributed to the scientific study of the household. The problems of human nutrition have become a central matter of investigation and study in household science; and mention should be made here of early American students of nutrition: John R. Young, of Maryland, who wrote a thesis at the University of Pennsylvania in 1803 on "An Experimental Enquiry into the Principles of Nutrition and the Digestion Process"; W. Tully, who presented a paper on "The Nature and Uses of Aliment in the Animal Economy" before the Medical Society of Connecticut at New Haven, in 1810; William Stith, of Virginia, who wrote a thesis on digestion in 1821 at Pennsylvania; Prof. Nathan R. Smith, M. D., of the University of Vermont, author in 1825 of "A Physiologic Essay on Digestion"; Caleb Ticknor, 1805-1840, a graduate at Pennsylvania in 1829, who submitted a thesis on "The Influence of Diet, Dress, and Amusement on Health"; William Beaumont, 1785-1853, the American surgeon who studied digestion experimentally for

many years in the case of Alexis St. Martin, "the man with a lid to his stomach"; John Stanton Gould, 1811-1874, professor of agriculture at Cornell and a student of institution dietetics; Edward Atkinson and especially the late Wilbur O. Atwater, 1844-1907, professor of chemistry at Wesleyan University, a recognized authority in nutrition. Prof. Atwater, as director of the Office of Experiment Stations in the United States Department of Agriculture, had oversight of the scientific work supported by Federal grants in the State experiment stations, and to him we owe not only the establishment of "nutrition investigations" in the Department of Agriculture and the popular bulletins on nutrition issued by the Department of Agriculture, but also effective encouragement of scientific work and instruction in nutrition in the colleges and universities.

As a student of household and institution food problems, an inventor of exact methods of investigation, especially the respiration calorimeter, a teacher of scientific workers as well as himself a scientist, Prof. Atwater is to be remembered as the creator largely of the present exact science of nutrition as far as America's contribution is concerned.

In fields other than nutrition, studies of housing, of management, especially Miss Salmon's "Domestic Service," of costs of living, beginning with Carrol D. Wright's work in Massachusetts in the seventies, of textiles in relation to the user—all these and many other studies now multiplying are making a foundation of science for education for the home.

In securing the common acceptance of household science as a subject of instruction, several influences may be mentioned in addition to the early domestic economy propaganda and this scientific movement:

- (1) The demand of home women for a better household technique, as evidenced by the development of proprietary cooking schools in the seventies and manifested to-day in various schools and social organizations.
- (2) The desire of young women for higher education, which resulted first in opening coeducational State universities and colleges, then in the establishment of independent women's colleges, thus furnishing a system of higher education in which special training for the home has come to be included.
- (3) The demand of the school men for a practical education, in terms of life activities, in part realized from 1880 on by the manual training movement, and now more fully achieved in the program of "vocational education" in which the household as a vocational field has an important place.
- (4) The nature of social progress itself compels the provision of an education for the home. There are pressing conditions, some economic and of pecuniary welfare, others, vitally human and

personal, which require us to look to our housekeeping and home-making if humanity is to secure the fullest possibilities from the home as a social institution.

The home woman's demand.—The adult home woman who has not received training in household science knows her needs and she has been increasingly aware of them in the last two generations. One of the first manifestations of this desire for organized household knowledge was the development in the seventies of practical cooking schools for "ladies," in the eastern cities. The New York Cooking School was started in 1876 by Miss Juliet Corson, whose cooking classes had begun in 1874. Miss Corson had an attendance of 200 the first year, and the school soon included not only a ladies' class, but a plain cooks' class, children's class, normal class, etc. The New York Cooking School is still performing a creditable and useful service.¹

In 1876, Miss Johanna Sweeney started a cooking school in Boston; in 1876 Miss Maria Parloa gave her first cooking lectures in New London, Conn., and the next year opened her cooking school in Boston; in 1879 she established the summer school of cookery at the Chautauqua Assembly, Chautauqua, N. Y.; and the same year Miss Parloa lectured in the Boston Cooking School, then established by the Women's Educational Association, of Boston, and incorporated four years later. This school was continued until 1902, when it was merged with Simmons College; Mrs. D. A. Lincoln was made principal in 1879, and later principals were Miss Ida Maynard, Mrs. C. M. Dearborn, Miss Fannie M. Farmer, and Miss M. W. Howard.

A school of cooking was opened in Philadelphia by the New Century Club, with one of Miss Parloa's pupils, Miss Devereux, as teacher, in 1878; Mrs. Rorer followed her a year later for a couple of years, and then opened her own school, The Philadelphia Cooking School, which continued for 25 years. Another early worker was Mrs. Helen Campbell, who established a school at Raleigh, N. C., in 1877; and at Washington, D. C., in 1880.

In addition to these fixed schools, lectures and demonstrations were given before women's clubs and similar organizations by the principals of these schools and other lecturers, in many cities and towns. Primarily this meant an opportunity for training for adult home women, although children and domestics also often received instruction; public opinion was also being educated to demand, a little later, household education in the schools.

To-day the needs of the home woman for more adequate household knowledge are met by home economics work in women's clubs; extension work of the State colleges, and urban extension teaching of settlements, etc.; continuation education at public expense; the

¹ The work of this school is described more fully in Part II of this report (Bulletin, 1914, No. 37).

great popular literature and periodical publications devoted to home problems, and many other agencies.¹

Woman's higher education and the home.—The higher education of women which has been secured in the last 60 years now includes in its program education for the home. Mary Astell's plea for a college for women in England in 1697 began to be answered in America in the first half of the nineteenth century. Oberlin College opened its doors in 1837 to four women college students; in the same year Mary Lyon's fight for an incorporated, endowed higher institution for women established Mount Holyoke Seminary, though it was not to attain full college rating until 1888. Beginning in 1850 with Utah University, and following with Iowa in 1856, Washington in 1862, Kansas in 1866, Minnesota in 1868, and Nebraska in 1871, it became usual to establish the State universities for men and women students alike, and other State universities already founded opened their doors to women—Indiana in 1868; Michigan, Illinois, California, and Missouri in 1870; Ohio in 1873; and Wisconsin in 1874. About the middle of the nineteenth century several independent colleges for women were opened: Wesleyan Female College, Georgia, in 1839; Greensboro Female College, North Carolina, 1846; Elmira College, New York, 1855. Elmira's opening was in the decade in which Catherine Beecher was working for the establishment of practical arts colleges for women, to have departments of normal training, physical training, and domestic economy. Ten years later Matthew Vassar established a college for women, with adequate endowment, and in his letter of directions included domestic economy in the program of studies, though no place was given it by the faculty; Smith and Wellesley Colleges (1875) and Bryn Mawr College (1880) followed, as academic colleges with no provision for applied science. The women's colleges coordinated with universities, Radcliffe (1879), Barnard (1889), and the women's colleges of Brown University, Western Reserve University, and Tulane University, repeated the academic model; Brown University, however, has had extension lectures on household science, and Newcomb College of Tulane University and the college for women of Western Reserve University now have growing departments of home economics.

The State colleges and universities gave the first welcome to this practical teaching. The young women were pressing into these institutions and seeking opportunities both for higher general education and for specialized vocational preparation. The State College of Iowa gave lectures on housekeeping in 1872; the State College of Kansas gave its first instruction in sewing in 1873, and a course on foods by the professor of chemistry, beginning in 1875; and the State University of Illinois, then the "Industrial University," in 1874 began

¹ For a detailed statement of the work of these agencies, see Part II of this report (Bulletin, 1914, No. 67).



A. GIRLS' CANNING CLUB WORK. EXTENSION TEACHING, STATE NORMAL SCHOOL AT HARRISONBURG, VA.



B. WARM LUNCH SERVED IN AN IOWA DISTRICT SCHOOL.
(Courtesy of Iowa State College.)



A. HOUSEHOLD ARTS IN THE KINDERGARTEN.

Mid-morning lunch of cocoa and crackers. The cocoa was made by the children. Table and chairs were constructed by the children.



B. HOUSEHOLD ARTS IN THE KINDERGARTEN.

Washing dishes after school lunch. Work aprons also made by the children.

instruction which a year later developed into a well-planned four-year curriculum leading to the degree of bachelor of science in the school of domestic science, and this school was continued at Illinois for a number of years. In 1877, instruction was begun in Laselle Seminary, Auburndale, Mass.

In 1890 there were departments in 4 State colleges—Kansas, Iowa, Oregon, and South Dakota; 9 more had been added by 1895; by 1900, there were 30; and to-day practically all the State colleges and universities have departments of home economics.¹ One can not ascribe too much credit to the land-grant colleges and universities for their contribution to the development of education for the home. It is especially this group of colleges, among higher institutions open to women, that welcomed and developed the subject of home economics.

The academic colleges for women long hesitated before yielding to the demand for applied science instruction, but with the exception of a few conservative institutions the subject of household science has now found a place. And in the excepted institutions applied science courses show a tendency in this direction. If the movement for higher education of women is not indeed to prove sterile, it can not stop with providing academic instruction, but must include specialized professional education for women's unique fields of service comparable to the schools of engineering that have been developed for men. It is such technical education of women on the collegiate level, indeed, that was created by John Simmons in establishing Simmons College, Boston (1902); that has been further provided by the school of practical arts of Columbia University in 1911; the recently established graduate school of education at Bryn Mawr; the vocational departments of Elmira College (Elmira, N. Y.), Rockford College (Rockford, Ill.), Milwaukee-Downer College, Mills College (California), Newcomb College of Tulane University, and Women's College of Western Reserve University, to mention only a few items of progress in this field. The example of Wellesley College in establishing in 1890-91 a course in house sanitation and the present offering by Vassar, Smith, Wellesley, Mount Holyoke, and other women's colleges of courses covering such household matters as the chemistry of foods, sanitary chemistry, and the economics of consumption show that the idea of some professional training as a supplement to an academic college course is finding increasing favor. As rapidly as such professional training is provided for women college students direct preparation for home responsibilities will doubtless be given a place in the program.

The schools—Manual training and vocational education.—Household arts was introduced into the public schools in connection with the

¹ See Part III of this report, Bulletin, 1914, No. 23.

manual training movement beginning in the eighties, and has received additional impetus in the vocational education propaganda of the last decade. Interest in the household arts as school subjects antedated the manual training movement, however. Boston school girls as early as 1798 are said to have spent school time on sewing under their regular teachers; on petition, the school committee gave permission for needlework, in 1821 in the primary school, and in 1835 in the second and third classes of the writing school; in 1854 a petition that sewing be introduced into all grammar schools was received, the interest of the petitioners very evidently being the social or philanthropic desire that children in needy families be taught to sew. In 1870 the Massachusetts Legislature made drawing obligatory in public schools; in 1876 it authorized local school committees to teach sewing, and the Boston committee soon introduced the subject. The philanthropic interest in the teaching of sewing and cooking meantime was extending over the country, especially through the kitchen-garden movement,¹ and sewing and cooking classes were started by private initiative in New York, Philadelphia, Boston, Cleveland, Cincinnati, and Chicago, beginning about 1876. These voluntary classes, started primarily to improve social conditions, were in many cities finally taken over by the educational authorities in connection with the manual training work, as when the cooking classes for school children in Boston, started by the Young Women's Christian Association in 1880, and others opened by Mrs. Shaw and by Mrs. Hemenway in 1885, became the basis of regular school work in 1887. Dr. Jessup, in his study of "Special Supervision in the Public Schools," has traced the transfer of standards in these voluntary classes as they came under the manual training influence in the schools, showing how the original social and humanitarian point of view gave place to an intellectual and educational purpose; the subject was pedagogized, yet the practical ends in cooking and sewing had been so stressed "that the refraction in these subjects was less than in the case of manual training."

The transformation of the "Kitchen Garden Association" of New York into the Industrial Education Association in 1884, which became a propaganda agency of the manual training movement, was a recognition of the fact that household arts was an integral part of the wider manual training movement. This movement meant a new method for all school subjects quite as much as new subject matter itself in the schoolroom. Prominent in the purposes of the association was this:

To train women and girls in domestic economy and to promote the training of both sexes in such industries as shall enable them to become self-supporting; to study the methods and systems of industrial training and secure their introduction into schools.

¹ See p. 31.

It was this Industrial Education Association which in 1888 established the New York College for Training Teachers, now Teachers College, Columbia University. Teachers College, together with Pratt Institute, Brooklyn, established in 1887, Drexel Institute, Philadelphia, in 1891, and the Kansas State Agricultural College, the courses of which go back to the seventies, are to be mentioned here as the chief early sources for trained teachers of household arts for public school work. The training of household arts teachers in normal schools began with the normal class at the Boston Cooking School, taught by Miss Maria Parloa, in 1880-81, and in successive years by Mrs. Lincoln, Mrs. Dearborn, and Miss Farmer, and with the private normal school of household arts, established by Mrs. Hemenway in Boston in 1888, and later transferred to the Framingham (Mass.) State Normal School; and normal training went forward, at the South especially, in the next decade, while in the last 10 years the training of teachers in normal schools and colleges alike has progressed rapidly.

Some of the other early dates of introduction of household arts into schools may be noted: Manual training for boys and girls in Montclair, N. J., 1880; sewing in Peru, Ill., 1881; sewing in Springfield, Mass., 1883; high school domestic science first taught in Toledo, Ohio, 1884; domestic economy in San Francisco High School, 1885; cooking introduced into the city normal school, Philadelphia, 1887; sewing and cooking in public schools, Washington, D. C., 1887; manual training in primary schools of Boston, 1890.

As household arts was introduced into the schools through the manual-training movement beginning in the eighties, so its recent great development has come in connection with the industrial education movement. The Massachusetts industrial education law of 1906 began this movement, and the special legislation of this and other States is presented in Part II of this report.¹ It is sufficient here to call attention to the fact that the household is given full recognition, together with agriculture, industrial, and commercial vocations as a field for which the schools are to give preparation. With the training of young women for pursuits outside the home, this may mean the learning of a double vocation—homemaking and a second vocation to be followed in the period between school and marriage, and perhaps later.

Social progress and education for the home.—The nature of social life itself calls for an education related to the home. This is true on general grounds, and there are many specific considerations to reinforce the argument. In no field to which training can be applied are we willing to-day to trust to learning by chance or by imitation; the home as a conservative institution has been slow to receive edu-

¹ See Bulletin, 1914, No. 37.

cational attention, but its vital interests make education for the home second to none in importance.

To the child the home furnishes the intellectual and moral life with the fundamental attitudes that control in all other relations. It is here, if anywhere, that the average adult finds the personal satisfaction and development which is the central experience of living. For all its members the home is the center of life's satisfactions, and in it we live. This personal life of the home can be strengthened and enriched by well-considered plans and by better home ideals. Strength and satisfaction in the home relationships form a prime problem. The breaking down of the family bond is to be overcome by strengthening that bond, by enriching the home experience of the individual, child and adult alike. This is the only cure for the divorce evil. Our education for the home will be a sorry thing indeed if it concerns simply the household arts of cooking, sewing, and house care, unless indeed it teaches us the arts of "family building," of home making, of living in families in such ways as to bring increasing personal satisfaction as the years go by. It is just this strengthening of the personal life that education for the home is ultimately to furnish.

As related to individual and social prosperity, also, the home is vitally concerned. We have come nationally to a time of economic pressure. Our free lands are gone, the exploiting of wealth from the soil is over; and national conservation, efficiency in production, and thrift in the household are the new watchwords. Progress for the average family group will turn now on the wise household use of resources more than upon increase of wealth. Truly we need still to increase efficiency in producing wealth, but intelligent consumption of wealth especially merits attention. This means the education of "the woman who spends," and emphasis upon domestic economy as well as upon industrial economy. It means training a nation's homemakers to the economic possibilities of their vocation.

We need to *teach* home making, too, if we would reach the child. The child has become school minded; all other knowledge reaches him through the school, and the school can therefore increase the child's interest in and respect for his home.

Briefly the school can do these things for the home: (1) Reinforce the natural interest of the child in the home and strengthen that home mindedness of the best type which centers the individual securely in the small kin group as the only enduring basis for his wider social relations; (2) impart knowledge necessary for leading or sharing in the activities of the household as regards shelter, food, clothing, management, child life, thrift, and other household matters of importance; and (3) afford some practice in these activities

where such practice is necessary for learning, both by laboratory practice within the school and cooperation with the home.

We must use the school route then as regards home betterment quite as we do for progress in any other field, because the child and the adult, too, are school minded.

The nature of housekeeping and home making has changed so that there is subject matter to be taught. It is no longer a rule of thumb to be learned by imitation. Under the old housekeeping, infant mortality, sickness, lessened efficiency, ill-considered expenditure, inartistic and unhygienic surroundings and conditions that make housework difficult might abound for lack of knowledge of a better way. As rational ways of conducting the household have become established, these must be made current by education. We are not content that city dwellers get tuberculosis when habits of sleeping with open windows can be taught, or that farm women continue to carry water from the spring when piped water "can be taught into their houses"; or that both send forth to work men inefficient because of poorly prepared food. The better knowledge now exists, and the spirit of our day demands that this knowledge be brought to every home by education.

The popular demand that our schools give training for the home is based, therefore, first on the significance of the home in the life of every individual, adult and child alike. If the school can increase the meaning of home to each of us, this is a kind of personal wealth which every individual wants. Next, on the value to society of the moral purpose, altruism, and cooperative spirit that arise from wholesome home life,—these are the ethical qualities which communities will need more as modern life grows more complex, and there is no other source for their development but the school of unselfish family relationships. An education for the home can not create these qualities, but it can emphasize them and can do something to refine, increase, and make them sure.

Further, education for the home by insuring skill in the household use of wealth is to be socially supported because it will increase economic welfare. It will promote thrift, protect health, and thus add to the workers' efficiency; it will professionalize the wealth-conserving vocation of housekeeping, just as vocational training in commerce, industry, and agriculture will increase the production of wealth.

The application of science to everyday affairs has created a new home making, the facts of which are now assembled ready for teaching; the educational attitude of child and adult alike makes teaching the easy and natural process in this field, as in all others. The social demand is as unmistakable as it is justified that this knowledge must be applied to the home here and now by means of the school. Our

communities, States, and the whole country are welcoming educational effort for the benefit of this oldest, most personal, most significant of human institutions, the family and the home.

Section 2. THE SUBJECT MATTER OF HOME ECONOMICS.

An authoritative definition and outline of the subject matter of home economics has been given by the American Home Economics Association in the "Syllabus of Home Economics" (1913).² The definition is as follows: "Home economics as a distinctive subject of instruction is the study of the economic, sanitary, and æsthetic aspects of food, clothing, and shelter as connected with their selection, preparation, and use by the family in the home or by other groups of people."

It is to be noted in the definition that home economics embraces the three subjects—food, clothing, and shelter; that for each their practical relations of selection, preparation, and use are emphasized; and finally, that the subject is an applied science in that its facts are comprised in the economic, sanitary, and æsthetic aspects of its three divisions—food, clothing, and shelter.

The syllabus outlines the subject matter under four main divisions: I. Food; II. Clothing; III. Shelter; and IV. Household and institution management. The first three subjects, food, clothing, and shelter, are each subdivided into (1) selection, (2) preparation, and (3) use; and the fourth, management, into (1) material basis, (2) social contacts, (3) activities and functions, and (4) aims and results.

The following subdivisions of the syllabus dealing with foods will illustrate its general scope: (1) Selection—theoretical considerations, classification, composition and properties, nutrition value, production and manufacture, adulteration, cost. (2) Preparation—cooking, preserving, serving, handling, and care. (3) Use—theoretical considerations, dietetics, catering, social relations, standards. Under each of these subheadings are grouped, in outline form, analyses of the subject matter.

The syllabus is intended to show in a general way the content of home economics as a distinct branch of knowledge—

to classify in logical order the various topics which can properly be included under the term "home economics." It does not represent an outline for a course of instruction, but rather a classified list of topics from which courses can be made. * * * Home economics, like many other subjects of instruction—for example, sociology, engineering, or agriculture—is a complex. In it the contributing subjects are grouped around the ideas of food, clothing, and shelter. Among contributing groups are art, history, anthropology, sociology, æsthetics, economics, physiology, hygiene, mathematics,

¹ The subject matter and content of instruction in home economics is concretely illustrated by outlines of typical college courses given in Part III of this report (Bulletin, 1914, No. 35).

² Syllabus of Home Economics, American Home Economics Association, Roland Park, Baltimore, Md. 1913. Paper, 50 cents; cloth, \$1.

chemistry, physics, and biology. * * * As is the case with many other subjects, courses of instruction in home economics may be cultural, technical, or vocational, and the grade of instruction primary, secondary, or advanced. The instructor must select the proper material from the total range provided, the selection being determined by the particular requirements of the case.

Section 3. TERMINOLOGY IN EDUCATION FOR THE HOME.

The terminology applied to education for the home and its various divisions has been and still is confused. Home economics as the generic term has the widest sanction, aided, doubtless, through its adoption by the Lake Placid Conference on Home Economics and by its successor, the American Home Economics Association. The Lake Placid conference in 1904 adopted the following terms for use in designating educational work of various grades: Hand work for elementary schools; domestic science for secondary schools; economics for normal and professional schools; euthenics (better living) for colleges and universities. While the term home economics has had wide use as a generic term—for example, in college departments, in Federal legislation adopted and proposed, in Government use—these other recommendations have not been accepted. One distinction, long observed but now rapidly disappearing, is the use of the term "domestic science" to indicate cookery and sanitation and "domestic art" to indicate textiles, sewing, dressmaking, millinery, and decoration. The distinction is not well drawn, for there is science in the "domestic art" field and art in the "domestic science" field.

The term "household arts" seems to be growing in use, especially for work in public schools, and even in some college departments where it occasionally replaces the term "home economics." The public school use of the "household arts" term seems assured; it is incorporated in several of the industrial education laws, which will largely control this teaching in the future. The National Society for the Promotion of Industrial Education now recommends the use of household arts as a term for the training of the housewife, and the supplementary training of girls and wage-earning young women in household matters; the projected training of wage-earning domestic employees, cooks, etc., is by this society included under industrial education.¹

An examination made of State laws showed that terms are used as follows: In laws regarding elementary education, domestic science is mentioned 12 times; domestic economy, once; household management, decoration, etc., once; and household economy, once. In laws regarding secondary education, domestic science is the term used 18 times; domestic economy, 7 times; household economics, 8 times;

¹ See also "Vocational Education, Proposed Terminology," report of the committee on vocational education of the National Education Association, July, 1914.

household arts, once; homemaking, once; domestic arts and sciences, once. In laws regarding normal schools the term "domestic science" is used once and "household economics" once. In the industrial education laws, "household arts" appears three times; domestic science, once; household science, once; and home making, once. By this count domestic science is preferred everywhere except in industrial education, where household arts is preferred. An examination of terminology in use in local schools would be a better test of usage than this legislation, however.

The new emphasis upon vocational training makes necessary a comprehensive term indicating the profession of household management as agriculture indicates farm management; "domi-culture" was once proposed, though perhaps not seriously. "Home making" and "housekeeping," especially the former, have come into use to indicate the complete field of home responsibility—the two terms have a different connotation, and both fields indicated are to be included in the education for the home. It is just this emphasis upon the entire direction of the household as an aim in vocational education that is one of the needs in the new vocational training; a corresponding accurate professional term is therefore important.

The qualifying words "home," "domestic," "house," "household," have all been used with various general terms as "science," "art," "economy," "economics," "arts," "technology," "engineering," "management," etc. Of the qualifying words the choice seems to lie between "home" and "household." "Home" emphasizes the social and personal elements more and lays less stress on the mechanical, technical, and administrative side. "Household" seems a more appropriate scientific term than "home." "Home making" and "household management" indicate at bottom the vocational distinction between the services, position, responsibilities of the unpaid housewife or other member of the family and those of the employed manager of a household. Doubtless there is great need of accurate vocational terms, and "homemaker" and "household manager" are two such terms. As to the general terms used—science, art, economy, economics, art, technology, engineering, management, and administration—some are academic names for knowledge to be imparted and some emphasize knowledge in use in a profession. The traditions of the schools favor academic words like "science." The demand for vocational training properly asks for generic words that mean the vocation or profession, not the study, and professional terms will be used ultimately in higher technical schools.

The practical suggestions are these: To use the common general term home economics for the whole field of instruction, at least until a better one is found; discard the ambiguous terms domestic science and domestic art; use household arts in elementary schools and possibly in secondary schools—though in the latter a more vocational

term, home-making or household management, is more accurate; in academic high schools the term household science may temporarily be useful until the vocation of the girl who does not go to college is adequately recognized; in academic colleges home economics is probably the most useful term, although at present collegiate instruction in this field is often given in special courses, such as the economics of consumption, the economic position of women, the home as a social institution, food chemistry, sanitary chemistry; and in colleges the possibility of "euthenics" as a term is to be taken into account; in technical colleges and professional schools, the professional terms household management or administration, homemaking, household arts, technology, or engineering will be increasingly used as indicating the field of service, while terms like foods, shelter or housing, clothing, management, service, marketing, accounts, child care, house care, laundering, domestic relations, will ultimately indicate divisions of instruction, terms taken from the concrete situation in the household itself.¹

The term "home economics," it is to be noted, is getting into popular currency, too, especially in connection with extension teaching and in connection with Federal legislation, although here it will have to contend with a term in wide current use, "domestic science," and with the term "household arts," which is gaining currency in public school and industrial school work. As to Ellen Richards's term "euthenics," it is difficult to predict—scientific people are using it increasingly, it seems, and a few college courses have adopted it. The "eugenics" movement, better living by controlled heredity, is making the way easier for its correlative, "euthenics," the science of better living by controlled environment.

Section 4. THE AIMS IN EDUCATION FOR THE HOME.²

The recent State laws providing for industrial, agricultural, and commercial education have uniformly included household arts training as an integral part of the program. Under these laws much of the household arts teaching in the public schools will now be developed. It is an important question just how exclusively this vocational aim should have recognition. Probably in the first six grades it should not appear at all, and ultimately, as the years of actual schooling are increased, it should not appear in the whole elementary school. Fundamentally the purpose of the elementary school is to emphasize subject matter and not technique. In the secondary and

¹ The development of agricultural curricula presents an analogous situation. These are now organized around the units of farm activity, not about academic departments of chemistry, physics, bacteriology, etc.

² For a further statement of aims in the elementary schools, based on the statistical returns, see Part II of this report, Bulletin, 1914, No. 37.

higher schools, however, the primary aim must be vocational; that is, the acquirement of knowledge and technique which will yield efficiency in practice. Just how this efficiency is to be secured we may not yet know. It will not come by exclusive attention to skill nor by exclusive attention to knowledge. That much is certain. It may be known by its fruits—power in the actual situation. There can be no doubt that emphasis on the vocational aim is the one thing needed in the secondary and higher institutions. It has been thus expressed by Dean James E. Russell, of Teachers College, Columbia University:

Under domestic science and domestic art we have been teaching *subjects*, in the sense that chemistry and algebra are subjects; we are now to teach a vocation—the trades of the household and the professions of the domestic engineer and homemaker.

The vocational point of view is emphasized by the department of public instruction of Pennsylvania in a recent circular on Household Arts under the new vocational education law, which makes a distinction between domestic science and household arts, meaning by the latter vocational preparation for housework, either in one's own home or in outside domestic employment. In interpreting the vocational education law the State department will not give grants for ordinary domestic science and domestic art courses:

Manual training, classroom sewing, and laboratory cooking have in the past lacked the vocational purpose and methods adopted in vocational training. Classroom sewing and laboratory cooking frequently have no definite relation with the requirements of the average home. The sewing does not always enable the girl to make her own garments. Little or no attention is given to the item of cost, the selection of material, the remaking of a dress, or the repairing of clothing. Laboratory cooking is too often confined to the preparation of salads and dainties, rather than the preparation of the substantial food required by the average family. Too little attention is given to foodstuffs offered by the local markets and to the economic condition of the group served.

"Household arts education," on the other hand, has for its controlling purpose the preparation of the girl for efficient and profitable service either as a manager of a household, or servant, or waitress, or cook, whether this service be rendered in her own home or in that of another as an employee.

This emphasis on vocational preparation means that the problem is the teaching of homemaking (i. e., responsible direction of the personal life of the family group, a joint responsibility of men and women, chiefly administered by women), child-care, housekeeping, control of the family or individual income, cooking, sewing, laundering, and other special household arts.

But academic or cultural study—the mother tongue and its literature, the historical and present social situation, the scientific method—should accompany technical and vocational training, so that the two will fuse. Life itself is vocation plus avocation, and education can safely follow this pattern. Pure academic training is a dish of sweets with no gripping experiences; exclusively technical

training deadens and narrows. Your classicist may easily be a prig, your technician a boor—neither is an acceptable human type. Education to make human beings must recognize two facts—the day's work and the social life of the mind.

Education for the home must aim to reach every girl. This suggests that household arts should be a required subject in the elementary school; and that the subject must be placed low enough in the grades to reach the majority of girls before they leave school (fifth and sixth grades at present), or an efficient system of continuation schools must be provided to help when these young women later marry. The Indiana commission on industrial education urged that no young girl under 16 be allowed to leave the schools who had not had instruction in household arts. A minimum of such instruction should be required in high schools.

It has been urged that the elementary school is the time to acquire hand skill. It is rather the time when, if any hand skill is taught, it shall be without effort at fine muscular adjustments. The stenographer, the draftsman, the surgeon, the artist—all learn fine muscular skill in adult life; the same is possible in household arts.

Education for the home must equip for home-making as well as for housekeeping; the personal relationships of the home, as distinguished from the work of the home, may be helpfully considered at any age, and by boys as well as by girls, in the elementary school. Ethical attitudes toward home and family may be absorbed from a teacher's attitude; and in high school and higher institutions a rational basis for the home idea may be developed.

Does education for the home aim at culture? A study of Greek costume or of Roman family life is cultural; why not a study of American clothing and of the modern home and family? While the concrete stuff studied is much the same, there is evidently a fundamental difference in point of view. The classical study is illuminating, broadening; so is the modern. But the former is avocational, and the latter vocational and professional. There are cultural by-products of any vocational study, as medicine or law, and they are comprised in part in the historical, social, and economic relations of medicine and law, the fringe of interesting knowledge that surrounds the center of facts that are vocationally useful. Education for the home is primarily professional and vocational, as are engineering, medicine, and law; it is domestic engineering. It has its cultural aspects, however, and in certain academic colleges these avocational aspects of the home—for example, the history of the family and the economic and social aspects of the household—may perfectly well find a place, when household technology would be excluded by the controlling educational ideal of the institution.

In large cities the household-arts course of study in matters of food and clothing must be adjusted to varying racial and economic

standards. Among immigrants national food ideas and national costume must be taken into account, and instruction adjusted to various scales of living—must be presented; and where actual adjustment of subject matter to different standards is not required, the teacher ought, by respect and sympathy for these differences, to maintain the child's respect for his parents' ways, and give no occasion in her teaching for weakening the family bond in the homes.

Section 5. METHODS OF TEACHING IN HOUSEHOLD ARTS.

Good teaching in household-arts, like that in any other field, involves the development of special faculties; that is, the acquiring of mental and manual power in particular fields. Some points are here suggested that may help in schoolroom practice. While the suggestions are especially designed for public-school work, some are applicable to higher institutions.

Instruction in theory and practice should go hand in hand; practice without guiding principles becomes mechanical and is undesirable, even though it may lead to skill; theory without practice is profitless.

In elementary schools the danger is relatively too much practice, too few ideas; in higher schools, if not too many ideas, often too little practice.

Habit training, cleanness, order, etc., are important, especially the habit of using the mind to solve problems and control conduct.

In food laboratory work there are two tendencies in higher institutions: (a) To adopt in the food laboratory the methods of the chemistry laboratory, to deal with small quantities in various tests and experiments, to examine processes critically; (b) to give practice in the preparation and service of food. Both are valid; the former represents the collegiate tendencies in teaching, the latter the technological and professional. Both methods are applicable in high schools.

In vocational instruction the child should undertake real projects; in cooking, food which could be served in a meal; in sewing, a garment to be worn; in housewifery, a room to clean—hence the usefulness of the practice house or apartment; in laundering, to wash the laboratory towels and garments brought from home; in household accounts, a record of one's personal expenses, etc. This emphasis upon a useful product is now noticeable in sewing, where at one time "sample books" were a common method.

Good teaching in a vocational subject throws upon the pupils the responsibility for the plan of procedure, for problem solving in as large dimensions as they are capable of. The general school authorities determine the course of study; the teacher determines the sequence

of topics; the pupils should as far as possible explore and blaze their way through individual problems. This is the method of human experience everywhere. Hence, good teaching means problem setting and discussions of processes and materials for its solution. There may be class discussions of problems, and the individual pupil may then undertake to draw up a way of procedure for her individual problem.

Individual laboratory practice in cookery in which each child receives the entire practice is to be recommended as the standard method in elementary and higher schools. Where conditions do not permit that—

group work may be organized in which two to four children in each class do the cooking while the other members of the class watch the operation, offer suggestions or criticism, ask or answer questions; and another group of four clean the dishes, while the remainder write the directions for making the dish which was prepared before them.

In classes for atypical and retarded children it has been found desirable to work with small groups of four to six pupils.

Excellent textbooks are now available, for high-school work at least, and obviously they will strengthen the organization of subject matter; they must not be allowed, however, to obscure the primary vocational aim of the teaching.

The use of the student's notebook in such form that it will serve as a record for later reference in housekeeping is important. Printed recipes and directions should be used to save time in copying. Many schools and institutions furnish typewritten notes; they might be furnished commercially in printed form. Loose-leaf recipes have been published by certain schools.

There is much available illustrative material for instruction in foods, textiles, and shelter. The idea of a school museum is applicable in this field. Magazine illustrations, advertisements, and dealers' catalogues, with prices, are useful. The practice house with selected kitchen, laundry, and other equipment is the best form of illustrative material.

Explanation can be facilitated by means of charts, blackboard sketching, drawing, demonstrations, or exhibition of models.

The reference library in schoolroom or laboratory, with dictionary, reference books, parallel textbooks, pamphlet material, including Government and other bulletins, should be a working factor in constant use in household arts instruction.

Home and school should cooperate. The school should teach in terms of home problems, as meals for the family and furnishings for definite rooms of the house; the school should use the housework of the home as a practice field; the home should use the products of school work. The children can contribute recipes, food costs, and

other data from home; the teacher can tactfully develop much cooperation.

Household arts should contribute to the social life of the school itself by school parties in which one grade entertains another—the girls the boys, the pupils the teachers, the children their parents. Excursions should be made to outside industries, especially to those that serve the home—laundries, bakeries, stores, etc.; and occasional addresses should be arranged before vocational classes by house-keepers, physicians, nurses, dietitians, decorators, plumbers, grocers, merchants, farmers, and others whose work directly concerns the home.

In instruction regarding the household one may well emphasize economy. It is possible to show that common inexpensive foods are nutritious and may be made attractive, or that a beautiful garment may be made from inexpensive materials. It is important to consider money values throughout—the English schools teach cookery in terms of three weekly family budgets: \$7, \$9.50, and \$12.50. American figures should be higher, but teaching in terms of the \$12, \$15, and \$20 wage-earning families is one of the most important points of approach in public-school work. Economy of time and strength, as well as of money, should have attention.

Special motives may be found in public exhibitions of the results of students' work. The value of such exhibits as a method of community teaching might be utilized with older students.

The sale of school products, food, clothing, etc., has important relations to motive and professional effort. The tomato canning clubs which sell their products, and the school lunches supplied with materials from cookery classes, are illustrations. Some foreign schools have sold cooked products to certain neighboring families which agree to take them regularly. Orders for dresses and hats have been handled satisfactorily by American technical schools.

Instruction in household and other arts should receive aid from other subjects in the elementary school, from geography, history, arithmetic, art, etc.; in higher schools, from related sciences; and in both cases it should contribute motive in such studies.

The teacher's own attitude toward the home as an institution is important; respect breeds respect, and the ethical results desired from this teaching will come not only from discussing the personal problems of the home, but from the manner in which they are handled.

Section 6. THE KINDERGARTEN AND THE HOME.

The influence of the kindergarten upon its child pupils, in its relation to home life, merits mention. Mother-play is fundamental in its method; the home is the source of much of its material and an important end-point in its teaching.

The kindergarten, in dealing with the youngest children, is bound to cooperate with parents and come close to home problems. More than other general school agencies, it tends to assume a responsibility for parental intelligence as to proper methods of home administration and child care, and this, naturally, because its little charges are making the first slight remove from entire dependence upon home environment. The institution which would first supplement the home must necessarily largely cooperate closely with the home, and may even seek to improve the home.

Prof. Patty S. Hill has gathered the following list of subjects presented before mothers' and parents' clubs in kindergartens. They suggest the broad service already rendered in kindergarten extension work. The list, given in detail, for subjects which concern the home, is as follows:¹

- I. The hygienic and curative effects of open air.
- II. Problems of food: Proper care of milk in dairies and homes; proper use and care of drinking water; qualities and differences in requirement of good food for child and adult; selection, preparation, and care of food in the process of manufacture, in stores and in homes; proper mastication of food.
- III. Problems of clothing: Artistic, hygienic (winter and summer); ethical, industrial; effects of ill-fitting clothes and shoes.
- IV. Hygiene and nursing: Food for infants; food for the sick or invalid; care of the sick in homes and hospitals; care of contagious and infectious diseases; care of eyes, ears, teeth, etc.; hygienic habits; hygiene of bathing.
- V. Hygiene and sanitation in homes: Building and fire laws; disposal of garbage in home and street; care of plumbing; protection from insects, flies, mosquitoes.
- VI. Home economy: Wages in relation to expenditure and savings; renting and ownership of homes; savings banks (adults and children); allowances for wives and children; wise and unwise methods of increasing family income with mother and children in home; sweat-shop work with its dangers to producer and consumer; child labor laws and their effects; right and wrong use of day nurseries.
- VII. Use and abuse of recreation and amusements.
- VIII. Good or ill effects of literature, music, and art.
- IX. Relation of rights and responsibilities in democratic government.
- X. Right of children to religious training and moral instruction.

Section 7. THE KITCHEN GARDEN AND TEACHING OF HOUSEHOLD ARTS.

The kitchen garden is a school of household arts for small girls which employs toy models of household furnishings and equipment and provides a program of activities, games, and songs related to home making. Established in 1877 by the late Miss Emily Huntington, of New York, to whom the name was suggested by the example

¹ Taken from "The Relation of the Kindergarten to Child Welfare," by Patty S. Hill, in the "Proceedings of the Child Conference for Research and Welfare," 1910, pp. 24, 25.

of the kindergarten, the kitchen garden soon had a wide vogue. Miss Huntington wrote in 1901:¹

Kitchen garden is a system by which children are taught the many little duties which, when properly performed, go to make a home comfortable, except the cooking of food. The system is a combination of songs, exercises, and plays, designed in a thoroughly practical way to train a child in simple housework. It is divided into six distinct parts or occupations, each taking a month to master. They comprehend the following details of domestic work: Kindling fires, waiting on the door, bed-making, sweeping and dusting, completely arranging a room with the manipulations of broom, whisk broom, dusters, etc.; also all laundry processes, from the preparation of the tubs to the polishing and folding; scrubbing; and laying a dinner table in the due order of courses. In connection with this a pricking lesson teaches in kindergarten style the parts of beef and mutton, and how to cook and cut each. Last of all comes the mud-pie play. Molding clay as a substitute for dough and pastry, the children knead bread, turn tiny rolls, cut out biscuits, and make pies. All the lessons are enlivened and emphasized with appropriate songs. Thus, with the simple device of toy appliances for real domestic apparatus, the children acquire the order, precision, and neatness essential to household service. The age of the children taught varies from 6 to 16.

The original kitchen garden taught household arts by means of miniature toys, a set for each girl in the group. A modification of the method uses large models of house furniture, and provides somewhat more of real work instead of play work and games, without going over entirely into the field of real work as in the usual elementary school lessons in household arts. Miss Mabel Louise Keech has outlined such a plan, using "one set of toys for the entire class large enough for the girls to handle easily and also small enough to be attractive and to appeal to those who so often find housework at home drudgery."²

Miss Keech outlines her two-year course for children from 8 to 14 years, in a class of 12, meeting for not over an hour and a quarter. A kindergarten room, if available, is recommended; a water supply and a stove for washing and ironing lessons is needed; uniforms of white caps and aprons are desirable. The equipment recommended, which can be purchased locally, costs \$30.90 for the bedroom set (a 3-foot dresser, 2½-foot bed, etc.); \$12.05 for kitchen (stove, 15 inches, etc.); \$13.75 for dining room; \$5.30 for laundry; \$0.60 for cleaning utensils; a total of \$62.50. As for methods of teaching, Miss Keech recommends that the class should be informal, and the method developmental; that is, stereotyped questions and answers should be avoided, and remarks, suggestions, and reasons for the procedure should be sought from the girls. Each girl should be given

¹ Page 11, in *How to Teach Kitchen Garden or Object Lessons in Household Work*: Emily Huntington, Doubleday, Page & Co., New York. 1901. Miss Katharine B. Peck, 123 West Twelfth Street, New York City, may be addressed for kitchen garden supplies.

² *Teaching the Little Home Maker by Kitchen Garden Methods*: Mabel Louise Keech, Philadelphia. 1912. See also Colson, Elizabeth and Chittenden, Anna Gansvoort. *The child housekeeper. Simple lessons, with songs, stories, and games*. New York. A. S. Barnes & Co., 1908, viii, 167 p. illus. 12°.



A. THE CRÈTE PLAN

Cooking lessons for high-school girls in a home kitchen with a home woman as teacher.



B. HIGH-SCHOOL TAILORING CLASS, HOLLYWOOD HIGH SCHOOL, LOS ANGELES, CAL.



A. THE VISITING DIETITIAN IN A CITY TENEMENT.

Lesson in home economy by a worker for the New York Association for Improving the Condition of the Poor.



B. KITCHEN IN A HOUSEKEEPING FLAT. STUDENTS IN THE CONTINUATION SCHOOL OF BOSTON, MASS.

an equal chance—better two brief turns as leader than for one to work till the others grow restless. Songs are made much of, but are used before and after the lesson. The lessons outlined include, among other topics, table setting, sweeping, bed-making (including the invalid's bed), washing dishes, kitchen work, laundry, polishing silver, general cleaning, serving, guest room, table decorations.

It is evident that if the original kitchen-garden method can be criticized because the miniature toys given to each individual may seem too unreal, the modified method with one set of larger toys for class use reduces hand activity to one, two, or three girls, while the others wait their turn. Good teaching doubtless can arouse interest and secure mental reaction under either system, however, and that is the essential thing.

The kitchen-garden methods, modified in one way or another, have been applied in the lower grades successfully. One application has been the teaching of habits of personal hygiene, for example, the use of toothbrush, through the medium of a doll in the classrooms. As a definite system, however, kitchen garden finds its best direct application, as a supplementary educational agency, in industrial schools, settlements, churches, and Young Women's Christian Association classes. Of 225 settlements reporting some instruction in household arts, 38 (16 per cent) provide kitchen-garden classes for small children.

It is "playing house," as little girls used to do in kitchens, on the back steps, and in the old-fashioned attic, but play on an organized basis and with an educational aim. With the great turning toward organized recreation in all forms made necessary by urban living, it is evident that kitchen garden has great resources in play activities for younger girls. It might profitably be widely applied in model house-keeping flats for younger patrons; in school centers for after-school activities; in indoor playgrounds; in fact, wherever the problem is to provide for the girl of 8 to 12 years a pleasant diversion that has an educational by-product of evident worth.

Section 8. CREDIT AT SCHOOL FOR HOUSEWORK DONE AT HOME.

Experiments have been tried in various schools relating to instruction in the household arts, with the practice of these arts in the home. Popularly expressed, the child is to "get credit" at school for housework done at home. Such cooperation means that the school does not attempt to furnish all the necessary hand training in the practical arts, such as agriculture, cooking, sewing, carpentry, etc., but relies in part upon outside practice—this, of course, in as

systematic and well-ordered ways as possible. It may be interpreted, as Dean Arnold, of Simmons College, has said, as a movement to make the school responsible for educational values in the entire circle of the child's life, in school and out.

At first thought the plan might seem, if skillfully organized, to promise relief from the need of teaching household arts in school at all. Such a suggestion is misleading, however. Cooperation with the home may, as suggested in section 9 below, make possible some beginnings where the school can not provide special teaching of household arts. Generally speaking, however, credit for practice work at home will not lessen the school's responsibility in household arts teaching. Provision for laboratory equipment and skilled instruction must be made as before. It would promise, however, to add vitality to teaching, to emphasize the useful outcome, and to unite school and home.

There are difficulties in the plan: The obvious variety of standards which must control the different housewives in judging their children's work; the adjustment in school marks and graduation requirements between pupils who are credited for home work and those who do not undertake it; the possibility of injuring home altruism if the child infers that unless home work is paid for in school marks it is not worth doing; the desirability of active cooperation between mother and teacher, which means a larger burden for the teacher. One superintendent has attempted to solve the problem of crediting outside work in industrial shop courses by accepting only that for which money compensation has been earned—i. e., such efficiency as will command a wage merits school credit—but this solution has little or no bearing on instruction in household arts, since the household work is necessarily unremunerated in money, and any general attempt on the part of parents to pay wages to their own children of school age for housework would, in all probability, prove socially inadvisable, as contrary to the genius of the family relationship.

The plan to utilize home work as a practice field in household arts teaching seems fundamentally sound, however, and may become an important auxiliary method. A typical experiment—that of the schools of West Chester, Pa.—is thus reported by Supt. A. L. Jones in June, 1913:

—We have been giving credit for home industrial work for about a half year. It has been commended by everyone. Many parents have spoken with me concerning the good we are doing by crediting in school what the pupils do at home. They report that the children do more work, do it better, and always willingly; that they have noticed that the home work is becoming habitual with their children. We credit all kinds of work, but not lessons recited in school or practice in music. Probably two-thirds of the pupils who have opportunity use these cards.

The plan was announced by a circular letter to parents. The parents send weekly reports on a form card, with work classified as (1) darning and sewing, (2) cooking and baking, (3) general housework, (4) other work at home, (5) work for wages away from home. The report shows the number of minutes per week and the quality marked on a scale of a 100. Ninety minutes a week for a month is the minimum work taken into account, and "the credit for home industrial work will be arranged with the school work in manual arts."

Similar experiments are under way in the schools of Oregon; in the rural schools of Adair County, Mo.; the city schools of Boise, Idaho; and in many other places throughout the country.¹

Section 9: INSTRUCTION IN 'HOUSEHOLD' ARTS WITHOUT SPECIAL TEACHERS.

It is important to recognize that instruction in household arts in the grades and rural schools need not wait on the appointment of special teachers, although its first introduction into larger places is doubtless best undertaken on that basis. The instruction in sewing has very commonly been done by regular grade teachers; the outcome of some experiments indicates that a better educational result is secured in the first six grades by having all manual and industrial work given by the regular grade teacher, although size of classes and ignorance of new subject matter make the plan difficult of general adoption. The suggestion of Miss Ricker, in the Maine Elementary Course of Study in Household Science, that if no actual cooking is possible, "some of the theory of domestic science, especially along the lines of sanitation, hygiene, etc., may be presented," points one way of beginning. There is the possibility of emphasizing practical issues in teaching the regular school subjects, a method good teachers always employ. Many teachers have also found it possible to set problems in cooking and sewing at school to be carried out at home, and the results reported at school for discussion.

In high schools the necessity of the special teacher is increased, and doubtless becomes imperative if the vocational ideal in training is to be achieved. Even in high schools, however, there are the possibilities of instruction related to the home in applied-science courses in biology and chemistry, and in the Crete plan of instruction by home women acting as teachers. Since the latter is a method generally applicable, it may well be explained at this point.

About 1905 the public schools of Crete, Nebr., instituted a plan of teaching domestic science lessons in the homes of citizens with the

¹ School credit for home work in home economics. Grace Schwanerhorn. *Journal of Home Economics*, 5 (1914), p. 141. See also, Connecting the school with the farm home. *Journal of Home Economics*, 5 (1914), p. 302.

women of the town acting as instructors, and the children of the high school going about in turn from home to home for the successive lessons. The plan has been in successful operation in Crete ever since and has been adopted in 50 or more high schools in Nebraska and neighboring States. The plan was to secure the cooperation of women able and willing to teach cooking of some given article of food. Lessons on 20 different topics were thus provided. The girls would come at the set time and meet for a discussion of the lesson in the parlor or sitting room, taking notes methodically. The instructor usually prepares the article for cooking, and sometimes cooks the article in the presence of the girls. With meats and poultry the article is prepared for cooking. Classes usually number at least 6, and 10 is considered better. Half past 3 o'clock is the usual meeting time. Students usually do not go to a class oftener than once a month, since there are about 20 articles in the cooking course, and the four years of high school are allowed for its completion. Usually a girl learns to make about five articles a year and visits a class only once for a lesson on each article, though she may attend as many times as she likes. Each instructor has a fixed day for her class. After the lesson the girls carefully try the recipe at home, receiving help from any source at this time. After several trials of the recipe the student is free to substitute her own procedure. Much is made of exhibits and demonstrations of the results of the instruction, with competitive judging of products at the completion of the course, which is marked by a graduation banquet and a certificate. There is no expense on the part of the school or on the part of instructors, since they use the product in their own families.

Some of the results of this system of teaching domestic science at home by home women are as follows: The girls see the interior of many good homes and gain impressions as to good household furnishings. The girls become interested in cooking, and "as a result many of them are found at the proper time in the kitchen or dining room while their mothers are entertaining callers in the parlor." There is marked improvement in the food in the girls' homes. The girls become practical cooks and take charge of the housework during vacations and in emergencies. There is a good influence from the instructors upon the girls, and vice versa. Some one has said, "It is the most democratic plan of cooperation and the best method of philanthropy yet discovered." "The Crete plan is best suited to villages up to about 3,000 population. With slight modification it can be used in rural schools."¹

The school lunch,² which has been introduced now into upward of 70 American elementary schools, and much more commonly into

¹ Domestic Science. Crete plan. Department of public instruction, Lincoln, Nebr., 1911.

² School Feeding, its History and Practice at Home and Abroad. Louise Strong Bryant. Longmans, Philadelphia, 1912.

high-schools, is primarily important as a means of supplementing the diet of children who are in school. It has an educational by-product, however, which is of distinct home importance in that it helps fix food standards for children. The provision of a warm lunch has been a means of introducing household instruction into many rural schools. In country districts the lunch has therefore a high educational importance, as well as its obvious health value. The educational results of the system of school lunches in city schools has been well stated by the school-lunch committee of the Home-School League of Philadelphia, as follows:

Direct: Obvious advantage of warm, attractive, palatable food to the body. Formation of regular habits of eating well-cooked food. Valuable experience in social intercourse, mingling freely with fellows and teachers on a friendly basis. Table manners and social amenities.

Indirect: Correlations with direct instruction in elementary hygiene, physiology, proper mastication, care of teeth, cleanliness. Teaching of food values; instead of tracing the digestion of an imaginary meal, tracing the digestion of school meal; academic versus concrete. Correlation with the pure-food movement; need of Americans particularly for sane ideas about food and its relation to working efficiency. Accustoming the children, especially foreigners, to know and like the cheaper and more wholesome American foods. Little Jewish and Italian children are learning to like hominy and corn meal and simple meat dishes.

Section 10. INSTRUCTION RELATED TO THE HOME FOR BOYS AND MEN.

Thoughtful critics of the home-economics movement have urged that an education for the home must take account of the boy and man. There is a certain truth behind the retort of the president of one of our women's colleges who when asked when her institution would introduce courses in homemaking, replied, "When men's colleges introduce such instruction." The fact is, of course, that men and women have different relations to the home, and an education for the home would recognize this fact. The home is not woman's only responsibility. We are recognizing that by providing training for women in all vocational fields. The woman should not be considered alone responsible for the home, and we shall recognize this fact in due time by bringing into the education of boys and men something regarding the home as the institution in which their personal living is cast. Just what form this home education for men will take can not yet be stated, but that it will be provided is indisputable, just as education for the other social institutions—industry, education, religion, politics, social economy—has been provided. Some suggestions may be made. First, the problem is not primarily to give instruction in the household arts; although training in cooking and sewing ought to be given to all boys in the lower grades, as it is now in our best elementary schools, and in the form of camp cookery at least in many high schools. Every individual needs

instruction in the use of food, clothing, and shelter. The man's home responsibilities are primarily social and economic, and instruction is to be devised for high schools and higher institutions in which boys and girls can be trained in common classes, for the most part, in the principles of sanitary housing and the sanitary occupation of houses; in food principles, which will enable one to select food wisely in health and in disease; judgment of clothing values, artistic and economic, that will bring sanity into an economic chaos; health problems, individual, domestic, and community; the social and economic aspects of the home which will improve ethical standards and increase personal satisfactions in family living. We shall doubtless in time have applied economics courses in high schools that will give not only the principles of wealth production as seen in industry, commerce, and agriculture, but the principles of wealth utilization as they appear in the relation of individual, family, and society to securing satisfactions from wealth. In still closer relation to the home, will be distinctive courses in home economics, which will outline the principles underlying the user's relation to food, clothing, shelter (as distinguished from courses in technique of the household arts), and also include the social and ethical aspects of the home. Such instruction will in due time be taken by boys as well as by girls. In the college, matters of home concern are already made a subject of study in several fields; sociology with its emphasis on the family institution, social economics with its problems of philanthropy and relief which invariably center about the family, economics with its growing recognition of the economics of consumption, chemistry and biology in their applications in nutrition and in hygiene and health; in all these fields, natural science, social science, and ethics, men and women alike are receiving instruction in important aspects of the art of right living.

An inquiry addressed to superintendents of city schools as to household arts instruction for boys was answered as follows: Of 227 schools replying as to elementary grades, 10 schools (or 4 per cent) reported that boys have household arts instruction; of 148 high schools replying, 13 schools (8.7 per cent) report similar instruction for boys. In the lower grades of the elementary schools boys are occasionally taught sewing; probably they are less commonly taught cooking. Evanston, Ill., and South Bend, Ind., have given courses in camp cookery to the boys in the grades; and in several high schools camp cookery has been given. Recent returns from 1,345 high schools show that in 57 schools, or in 4 per cent, boys have registered in home economics courses. The number of boys taking courses is reported as 370, or a little more than one-half of 1 per cent of the number of girls.

Without overemphasizing camp cookery courses for boys, two examples of such classes in high schools may be cited. Miss Hillyer,

supervisor of domestic science in South Bend, Ind., reports that in one year she had a class of 40 boys who asked for such a course and went through it with great interest and profit. They were given lessons in plain cooking and one of the results was a better appreciation of their share in the problem of food preparation in the home and greater respect for simple living. The Springfield (Ill.) high school maintained a class in camp cooking with a group of 17 young men, under the direction of Mrs. Lulie Robbins, now of Oregon Agricultural College. The boys applied themselves twice a week in the cooking laboratory to learning various ways of preserving foods, especially meats, cooking with condensed milk, and making seasonable and appropriate camp dishes. Camp equipment was also discussed, and the enthusiasm of the class was maintained to the end of the year.

At the third annual meeting of the American Association for the Prevention of Infant Mortality the section on continuation schools discussed the possible education of youths and men in home economics, with this topic:

The education of youths and men, through continuation schools and classes, including those primarily intended to increase wage-earning capacity, in the responsibilities and duties of home making other than supplying money; e. g., the elements of house planning and sanitation, of eugenics, first aid, contagion and disinfection, repairing furniture and clothing; of pure food and dietary principles, home gardening and beautifying.

C. A. Prosser presented a paper the conclusion of which was that such instruction will come about—

so far as men are concerned at the present time, not through formal classroom instruction in home duties for males only, but through the social and recreation work which the schools are yet to develop extensively, and through which, by entertainment and talk and lectures and moving pictures, carefully and tactfully presented among other interesting and helpful subjects that make for good citizenship, men, usually along with women, will have set before them the information and the illustration which will lead them into a better discharge of the duties and responsibilities of their husbandhood and parenthood.

A paper on "Home economics in the United States for men and boys" was presented at the same meeting by Dr. C. F. Langworthy, of the United States Department of Agriculture, which showed that here and there boys and men have already interested themselves in instruction in cooking, in dietetics, and in other subjects of home interest. In several high schools, normal schools, and colleges boys are taking courses in camp cookery. In several instances medical students have sought instruction in dietetics, a common item in the curriculum of European medical schools. In the agricultural colleges men have sought instruction in camp cookery, and courses have been offered for forestry students, engineers, and others. Training of professional men cooks has been provided in various ways.

Another bit of evidence worth considering in this connection is the interest shown by men in industrial communities in demonstrations and talks on better food and cooking arranged primarily for their wives.¹ Public lectures on housing, problems of dress, food, and other household matters usually bring together men as well as women.

In summary one may note that man's home responsibility is ethically equal to woman's. As we have lately been emphasizing woman's responsibility for municipal and civic matters, so we may urge that men become more conscious of the home and their relation to it. No movement, educational or otherwise, which seeks to benefit the home will succeed until the cooperation of boys and men is secured. It takes two to start a home and the child has a father as well as a mother.

¹ See Part II of the report, Bulletin, 1914, No. 37.

EQUIPMENT FOR EDUCATION FOR THE HOME.

Section 1. EQUIPMENT FOR TEACHING HOUSEHOLD ARTS IN PUBLIC SCHOOLS.

In selecting equipment for household-arts instruction in public schools, attention should be paid to (1) The requirements of this type of teaching. Equipment should be adequate for efficient classroom work; a room large enough, but not too large, with a floor plan that facilitates work, and sufficient equipment so that simultaneous practice may be afforded each member of the class; too many utensils may be as detrimental as too few, consuming time and not giving occasion for ingenuity; the household-arts teaching should not be handicapped by a laboratory located in the basement. (2) the community situation—conditions and equipment should be such as children have at home and should offer "incentive to the bettering of home conditions;" the use of electric stoves in a town where gas, coal, and wood are the common fuels is not to be recommended; the children must not be educated above the home, though the homes may well be elevated.

Cooking equipment.—The essentials of cooking equipment for schools are a room large enough for unit cooking equipments for the given class number; the equipment usually arranged in continuous tables in a hollow square, with gas plates above and storage space below; one or more kitchen-size ranges for class use; wall cupboards for storage of utensils not kept in pupils' outfits; food storage, if possible a small adjoining pantry, and facilities for table service—a dining table, chairs, linen, dishes, etc.

A cookery laboratory of 19 by 26 feet will accommodate 20 pupils without extreme crowding, providing room for cooking tables with gas plates, two gas stoves, and two sinks, but without room for wall cupboards or a dining table in the center. A cooking laboratory 26 by 38 feet, or better, 30 by 40, gives space for 20 to 24 pupils and allows room for cupboards and equipment at the sides or ends, and a dining table in the center of the square. The food-storage room and the diningroom may each be about 12 by 16 feet; such a diningroom will accommodate a table for 8, sideboard, and china closet. A small room fitted like a home kitchen with range, sink, food and utensil storage, adjoining the diningroom and the laboratory kitchen, is a desirable feature of equipment.

A prime question is whether such rooms shall be located in the building with other school rooms or whether all household-arts rooms shall be brought together in a model house or cottage. There is a tendency at present to emphasize the home idea by providing a cottage or apartment of rooms arranged like a house. There are great advantages if the house can be actually occupied by the students, and many thoughtful persons are urging that satisfactory instruction in housewifery, sanitation, and management requires instruction and practice such as can be given only in residence. The cottage method is already common in normal schools and colleges, but how far it can be adopted in public schools is a question. Cooking laboratories will evidently be required to handle large numbers; but life in a practice house or apartment as a method of teaching is quite within the possibilities for upper grade and high-school vocational classes. Even if there is not actual residence and sleeping at such a center, activities there through an extended period of hours, involving the getting and serving of a meal, entertainment of friends, with care of house, etc., seem entirely feasible. The continuation instruction in the Providence and Boston centers points this way. From the point of view of teaching cooking alone, the school laboratory has advantages over a cottage. It is evident already, however, that the purpose of household-arts education is not only to teach the household arts as processes, but also to furnish a new motive in homemaking. For this purpose the increasing use of cottages and centers which approximate a home in furnishings and atmosphere is obviously soundly justified. The cottage, of course, provides means for other instruction as well—cleaning, laundry work, sewing, etc.

The cooking laboratory laid out with long parallel tables or with long tables converging toward the teacher's desk or, more commonly, with tables arranged in an oblong hollow square, makes it possible for the teacher to see easily all the members of the class at work. Movable tables, or table tops on horses, may be used for temporary or inexpensive installation, but usually built-in tables with gas and water connections are provided; gas being supplied to a gas hot plate or small stove at the back of each unit of table-top space. One or more sinks with hot and cold water are usually provided, often at the ends or corners of the hollow square. In colleges and higher schools, "group tables," each occupied by two or more students, have proved satisfactory; as also the double parallel or long back-to-back tables, similar to the common chemistry block table. In college work the detached table or kitchen cabinet with separate kitchen range and small sink has been used, thus providing each student with a unit kitchen outfit comparable to the home kitchen.

The school kitchen should, if possible, be located on the top floor to control odors; never in the basement. Usually a hardwood floor will be found most desirable, or a floor covered with inlaid linoleum. Tile flooring, composition, or terrazo (if laid in small squares separated by narrow strips of marble to prevent cracking) may be used. Ample blackboard space, cupboard storage, and a bulletin board are necessary. If the building has a fan ventilating system, hoods made of glass should be put over the block of stoves and connected with the exhaust. The individual gas stoves may be built up by a local plumber; Bunsen burners may be used with a grill above, or small one-burner gas hot plates can be secured. They should permit easy cleaning, be rigid, and of open grill rather than solid metal, as the latter radiates much heat. A grill on which the small portable sheet-iron oven can be placed has in this respect an important advantage. There should be one or more complete ranges to give experience with other fuels and practice in larger undertakings. One or two large sinks are essential; several small sinks add to convenience.

Tables should be 30 inches high, 20 to 26 inches deep, and should allow 30 inches working space per pupil. A drawer beneath the table, with a slide space between it and the top for the bread board, is desirable. The drawer can be partitioned for utensils and finished in shellac. Below the drawers there should be a cupboard with door, or better a roll-front, providing storage for large utensils. A food-supply drawer may be placed between each two utensil drawers, the space beneath it affording room for a swing seat carried on a bracket. Table tops are best of white vitrified tiling; or of hardwood. If of wood, a zinc mat, asbestos lined, or an aluminum or other fire-proof strip may be placed at the back, beneath the stoves. A teacher's supply table, with drawers beneath to hold food supplies, and on large castors to roll from the supply room, is essential. A refrigerator and fireless cookers, home-made and commercial, should be provided.

Utensils should be of good quality, without seams, cracks, or angles where food may collect. Enamel ware is to be recommended for measuring cups, plates, pitchers, saucepans, and those utensils where heat is not too intense. Frying pans should be of steel; earthenware should be used for bowls, jars, etc. Of certain utensils, one for each pupil should be provided; of others one for 2, 4, or 10 pupils; and of others one for the class. A reasonably complete equipment of utensils costs \$160 for a class of 20.

An estimate as to the equipping of a laboratory for \$500 is as follows: Cooking table, single drawer, maple top, ash frame, \$100; 20 small stoves, \$30; 20 stools, \$10; 2 gas ranges, \$37; refrigerator, \$15; porcelain sink, \$25; 2 kitchen cabinets, \$19.50; utensils, \$160;

dining-room table and chairs, \$20; linen and china, \$30; supply table, \$8; home nursing equipment, \$10; laundry equipment, \$30; housework equipment, \$4. Total, \$498.50. It is to be noted that an oak cooking table for 20 pupils will cost \$500 if finished with a maple top, and \$700 with a tile top; so that the \$500 figure for the complete installation as above is a minimum figure. Tile tops may be figured at about 50 cents a square foot, and glass tops at \$1.70 a square foot.

In laying out a laboratory, detailed information is available; most of the State departments of education and State colleges and universities are ready to furnish information; and Prof. Kinne's "Equipment for Teaching Domestic Science" should be consulted for details as to floor space, working drawings of desks, comparative costs, lists of equipment, and utensils. In erecting new buildings, boards of education will find it convenient usually to include the cooking laboratory desks on the furniture contract and have them built in; or, if desired, one can now secure several types of commercial domestic-science desks ready to install.

The school lunch in some high schools and colleges is administered by the domestic-science teacher, and its equipment is therefore to be considered. A gas range, soup kettle, steam table for keeping food warm during the service, refrigeration, are important items of equipment; the service is usually by trays, the individual selecting the food from a counter, and the charge being made by a cashier at the end.

Sewing rooms.—Sewing instruction in the elementary schools is often given in the regular classrooms; special rooms are provided for more advanced work. The essentials are a room 24 by 36 or thereabouts for a class of 20 to 24; good light, preferably from the north, and adequate artificial light for dark days; sewing machines, one at least with a motor attachment of the household type (not a commercial motor-driven machine unless for trade work); lockers; a fitting room; and work tables, a good type of which can be made with hardwood legs and removable tops made of soft wood unfinished, so that they can be planed off as necessary when worn by the tracing wheel. Such tables should be made with stretchers for foot rests; drawers beneath tables interfere with knee room. Drafting and sewing tables may be 3 by 7 feet and 32 inches high; and tables for millinery and hand sewing about 2 by 5 feet and 28 inches high, the latter all of hardwood.

The sewing room may be provided with individual student lockers each about 9 inches high, 15 inches wide, and 24 inches deep, with hinged doors and locks, built eight lockers high; in millinery rooms the lockers should be 12 by 20 inches. Or there may be provided pasteboard boxes for students' work, and these may be stored on a shelf between classes. Large storage space for dresses should be

Published by Whitcomb & Barrows, Boston—a book to which this discussion is indebted.

provided in high-school laboratories; a convenient plan is a cupboard 6 feet high and 30 inches deep, with a pole for coat holders placed lengthwise at the middle, 6 inches from the top. The fitting room, with mirror, can be provided in one corner of the room by curtaining off a space 6 by 10 feet.

A small sink for water supply and a gas or electric iron with ironing board (the latter may be arranged as a cabinet conveniently) should be placed in each room where fabrics are treated. In each sewing room there should be a teacher's cabinet for materials.

Instruction in textile fabrics and materials require one or more microscopes, with dyeing kettles, tripods, Bunsen burners, test tubes, chemical reagents, etc.; such instruction in high schools may well be given in the chemistry or biology laboratory.¹

Laundry.—It is recommended that laundry laboratories be equipped in public schools and high schools, and that laundry be taught as a household art which has vocational as well as domestic possibilities of great importance. In England laundry is given nearly as much attention as cooking; and equipment is provided accordingly. Where possible, a separate room with tile floor and equipped with fixed tubs, ironing boards with gas irons, and steam drying room should be installed. This equipment is essential in technical high schools and for the vocational work of the upper grades. A room 24 by 36 with a storeroom adjoining will provide facilities. Small power machines, washers, wringers, and mangles suitable for home use should be installed, and the possibilities of water power, electric and gas power studied. Tubs should be of white enamel, not yellow, as the latter gives no color contrast for the linens in process of cleansing. Where no separate room is available, it is usual to provide portable laundry equipment in the cooking laboratory, consisting of soap cooker, starch kettle, fiber tubs, washboards, wringers, ~~stirrons~~, folding ironing boards, clotheshorses, clothes basket, line, pins, etc. For such teaching, equipment costing \$60 is sufficient. It is noteworthy that the Ontario education department, which sets a good example in providing more adequately for laundry instruction, places the value of equipment at \$150. For a complete laundry laboratory, with steam-drying room, \$750 would be an approximate estimate. The addition of power equipment—washer, extractor, and mangle, all electric-driven—in a technical school, may add \$2,000 to the cost. An estimate for the laundry laboratory of a college or a technical school has been furnished, as follows: Metal clothes washer, \$250; 20-inch extractor, \$135; 75-inch return apron mangle, \$600; 10-gallon starch kettle, \$25; metal steam drying room, \$350; 10 skirt-ironing tables, \$150; zinc-covered starch table, \$15; 7½ horsepower motor, \$250.

¹ For further details address the various State education departments or State universities; see also, "Domestic Art in Women's Education," Anna M. Cooley, Scribner's.

Cottage or apartment for household arts teaching.—In many towns and cities the public schools have provided cottages or apartments for teaching household arts; this type of equipment will be increasingly used as emphasis is put on vocational training in the household arts in the public schools. A good illustration is the public schools of Greenfield, Mass., in which a cottage was purchased for grade use and a larger house for high-school use. In the grade cottage, instruction is given to girls in the seventh, eighth, and ninth grades for one and one-half hours a week; classes are divided into two groups, the regular teacher giving sewing to one group, while the special teacher gives cooking and household management to the other.

The idea is to have the girls work under conditions as nearly as possible like those existing in an ordinary home. To accomplish this purpose, the kitchen is furnished with both a coal and a gas range, so that the girls may have experience in using both, and here four girls work together conveniently, two at each stove. Meanwhile, the rest of the class are accommodated in the kitchen laboratory, a room adjoining the kitchen, which has been fitted up with long tables, common-size gas stoves, and other necessary conveniences of a kitchen. An important phase of the work has been the making of soup, or cocoa, which is sold at 1 cent a cup to the children who take cold lunches to school. A pleasant feature of the work has been a series of receptions given each week by the different classes of girls to their mothers at the grade cottage. These occur Friday afternoons from 3 to 4.30 o'clock. The Mothers' Club has presented the grade department with a complete set of china and silverware, and many thanks are due them for their interest and cooperation.

The schools of Park Ridge, N. J., a town of 1,800 population, have secured a satisfactory equipment for household arts by renting a two-story concrete building erected originally with two stores below and two 4-room apartments upstairs. One of the store rooms is fitted for domestic science, the other for manual training; the apartments are leased to teachers; the whole is maintained as a model house, the children doing the work from scrubbing the floors to making beds, serving luncheons, etc. From September 9 to December 31, 1913, food costing \$202.87 was served and sold for \$347.63.

Another example of new equipment, patterned after the home situation, is in Crawfordsville, Ind., where the high school has provided a school kitchen, dining room, bedroom, bathroom, and sewing room, adjoining on one floor of the high-school building. So the Hollywood High School, Los Angeles, in its \$20,000 household and fine arts building includes a demonstration flat.

Provision of separate laboratories in household arts.—In the schedule of inquiry sent to superintendents of schools, the question was asked whether separate sewing laboratories are provided in the elementary school, or whether instruction is given in regular classrooms. Of the 362 cities that replied, 248, or 68 per cent, give sewing instruction in the regular class rooms. Of 274 elementary schools teaching cooking, 73 (26.6 per cent) report that cooking laboratories are provided in the separate school buildings, and 201 (73.4 per cent) that

cooking laboratories are provided at "centers." Therefore, in something over a quarter of cases only is cooking taught in the various elementary school buildings; in three-fourths of the cases central laboratories or "centers" are used. In elementary-school sewing instruction, on the other hand, in nearly three-fourths of the schools instruction is given in the regular classroom, and no special sewing rooms are provided.

Cost of elementary school cooking laboratories.—One hundred and eighty-six schools gave statements of the cost of cooking laboratory equipment for elementary schools, which vary from \$50 to \$3,000; the median cost is \$500, and for 50 per cent of the schools the cost varies between \$350 and \$750. The distribution of costs follows:

TABLE 1.—Cost of elementary-school cooking laboratories.

Costs of equipment.	Schools reporting cost.	Costs of equipment.	Schools reporting cost.
\$50.....	2	\$600.....	12
75.....	1	650.....	3
80.....	1	671.....	1
100.....	5	675.....	1
150.....	2	700.....	14
175.....	1	730.....	1
190.....	1	737.....	1
195.....	1	750.....	4
200.....	7	780.....	1
212.....	1	800.....	7
250.....	7	900.....	7
300.....	20	950.....	1
350.....	6	979.....	1
380.....	1	1,000.....	11
375.....	2	1,100.....	1
400.....	15	1,165.....	1
435.....	1	1,200.....	2
450.....	3	1,500.....	4
500.....	27	2,000.....	3
550.....	2	2,800.....	1
560.....	1	3,000.....	1
563.....	1		

Illustrative material for household arts teaching includes charts, illustrations, models, samples which illuminate points of fact and processes in the work of instruction. Charts showing the percentage composition of certain foods, compiled by Dr. C. F. Langworthy, of the United States Department of Agriculture, are on sale by the Superintendent of Documents, Washington, D. C. Illustrations of cuts of meat may be obtained of Pratt Institute, of Teachers College, and of the Philadelphia public schools. The food museum has been developed by some schools. In textiles, the most useful material is a teaching collection of the various fabrics most commonly used in a community, each marked with its price and uses, and made the basis of training textile judgment; also, illustrations of good color combination and good designs. For teaching shelter, samples of building materials, charts of plumbing, a model of a house showing framing, etc., samples of equipment for cleaning and of household utensils, have been found useful. Manufacturers furnish much free exhibit material.¹

¹ See "List of Firms Furnishing Equipment and Laboratory Supplies for Household Arts Teaching." Publication bureau, Teachers College, New York City. 10 cents.

Laboratory care.—The care of cookery laboratories and of dishes and utensils in laboratories has been a mooted administrative point. In reply to the question, "Does janitor help with service in cooking laboratory?" 67 cities answered "Yes," and 70 "No." Some questions were qualified, indicating that the janitor was responsible for care of floors, for garbage disposal, and so forth, rather than for any definite assistance in the laboratory work. In reply to the question, "Is extra service hired?" 8 cities answered "Yes," and 38 "No." In reply to the question, "Are teacher and class entirely responsible?" 84 cities answered "Yes," and 7 answered "No." It is evident, therefore, that present usage calls for care of laboratory dishes and utensils in public school work by teacher and pupils without special hired assistance, as of a laboratory maid. Janitors give some assistance regularly in the care of the room, the same as given to other schoolrooms, and probably in a small proportion of cases they give part-time aid of the sort that a maid might give. Drudgery of any sort is poor economy, and drudgery imposed upon an expert special teacher who receives a salary of \$1,000 a year is indefensible. School officials should expect to furnish help and labor-saving devices for all cleaning work in the laboratory that is without direct educational value. To burden the domestic-science teacher with this type of drudgery is to retard the introduction of the subject and hamper its teaching when introduced.

Section 2. EQUIPMENT FOR HOUSEHOLD TEACHING IN HIGH SCHOOL.

The usual high-school equipment consists of one or more single rooms as sewing laboratories, or cookery laboratories, each with its proper equipment, whether of drafting tables, sewing machines and lockers, or of cookery tables, stoves, and storage for utensils and dishes. Sometimes these rooms are arranged en suite, thus providing for the food instruction one or more food laboratories with adjoining storage rooms for foods and utensils, a dining room, where table-service exercise may be conducted, and a small room equipped as a home kitchen; and for the instruction related to textiles, one or more sewing rooms, with adjoining storage rooms and fitting rooms and sometimes a store for selling textile materials. Again, a laundry laboratory, bedroom, and bathroom as a laboratory for teaching are only less frequently provided. More and more these rooms are provided in one organized unit as a "model," or better, a "practice house," or "apartment."

A laboratory arrangement modeled on the cottage idea is the set of demonstration rooms—home kitchen, dining room, bed room—arranged as booths opening into a classroom, provided at the Wash-



A. DINING ROOM IN A HOME ECONOMICS BUILDING. IOWA STATE COLLEGE, AMES, IOWA.



B. SENIOR NORMAL COOKING (DIETETICS). SCHOOL OF HOUSEHOLD SCIENCE AND ART, PRATT INSTITUTE, BROOKLYN, N. Y.

ington Irving High School, New York City, so that lessons given in the different rooms are under the eyes of the class in the classroom.

An emergency room, with equipment for instruction in first aid and care of sick has been provided, notably at Newton, Mass. Similarly, a nursery is provided at Crookston, Minn.; while a reception room is part of the equipment at Saginaw, Mich. A lunchroom, i. e., a dining room on a large scale—sometimes the school lunchroom—is occasionally included in the domestic-science equipment, and this tendency may be expected to grow as children in all divisions of practical arts undertake more projects of real utility. Viewed educationally, household arts will only be taught adequately when a real practice field is provided for all phases of housework with the responsibility that belongs to a real living situation. It has, therefore, been urged that in urban communities, at least, housekeeping centers must be organized as an integral part of the public-school system in which selected groups of girls shall live for a week or more to perform personally and in due course all the duties of the housekeeper. Certainly any adequate training must include real practice, either in the children's own homes or in such practice homes as have been described.

Cost of high-school equipment for home economics.—For 192 high schools stating the cost of sewing equipment, the cost varied from \$20 to \$2,739; the median cost was \$200, and for 50 per cent of the schools the cost lay between \$120 and \$320. For 237 high schools stating the cost of laboratory equipment for food courses, the cost varied from \$75 to \$5,000; the median cost was \$500, and for 50 per cent of the schools the cost lay between \$400 and \$854.

A distribution of the costs as reported follows:

TABLE 2.—Cost of high-school food laboratory equipment.

Costs.	Schools reporting.	Costs.	Schools reporting.
\$75.....	2	\$700.....	11
80.....	1	730.....	1
100.....	1	760.....	6
120.....	6	780.....	1
150.....	1	800.....	14
175.....	6	850.....	2
200.....	7	884.....	1
250.....	4	900.....	5
300.....	19	999.....	1
320.....	1	1,000.....	16
350.....	4	1,100.....	1
375.....	2	1,150.....	1
400.....	19	1,200.....	5
434.....	1	1,350.....	1
435.....	1	1,387.....	1
450.....	2	1,384.....	1
500.....	43	1,500.....	10
550.....	1	1,644.....	1
600.....	1	1,900.....	1
670.....	1	2,000.....	6
775.....	1	2,234.....	1
850.....	1	2,500.....	2
900.....	16	3,000.....	3
914.....	1	3,500.....	2
971.....	1	5,000.....	1

TABLE 3.—Cost of high-school sewing laboratory.

Costs.	Schools reporting.	Costs.	Schools reporting.
\$20.....	1	\$275.....	1
30.....	3	300.....	24
50.....	9	312.....	1
53.....	1	320.....	1
60.....	1	325.....	1
70.....	1	332.....	1
75.....	11	350.....	4
80.....	1	375.....	1
85.....	1	400.....	6
90.....	1	432.....	1
100.....	26	450.....	2
119.....	1	500.....	17
120.....	1	550.....	1
125.....	3	570.....	1
128.....	1	600.....	8
143.....	1	750.....	1
150.....	10	768.....	1
155.....	1	800.....	3
175.....	5	905.....	1
200.....	29	1,000.....	5
220.....	1	1,200.....	1
228.....	1	1,500.....	1
250.....	15	2,000.....	1
267.....	1	2,739.....	1

Section 3, EQUIPMENT IN INSTITUTIONS FOR TRAINING TEACHERS—NORMAL SCHOOLS.

Equipment in institutions for training teachers should give intending teachers a varied experience: (1) With inexpensive and inadequate equipment, so that readiness to meet emergencies may be developed; (2) with home-made equipment, as by the construction and use of a packing box or kitchen table, cabinet with oil stove, to prepare for rural school conditions; (3) with various fuels—kerosene, wood, and coal, as well as gas and electricity, and if possible with gasoline and acetylene gas; (4) with a home kitchen equipment of the most meager kind, such as graduates will be called upon to use in visiting teaching. Where training school or college equipment is very complete, special pains must be had to prevent the attitude that anything less complete is inadequate and impossible. There is needed ability to do "tomato-can cookery." The practice house with required residence for giving all-round household practice is especially important in teacher training.

Home-economics equipment for State normal schools.—Laboratory equipment was reported upon by the normal schools as follows: For instruction in foods and cookery, 69 schools report a special laboratory and equipment, and 3 schools report two such laboratories, 65 schools report a dining room for laboratory instruction in table service (one of the number reporting two such dining rooms), while 7 report that no dining room has been provided; and 2 schools report the use of a cafeteria for teaching purposes. For instruction in sewing and textiles, 67 schools report a special sewing laboratory (of this number 6 schools report two such sewing laboratories and 3 schools report three laboratories); while one dressmaking room, one drafting

room, and one millinery room in addition are reported. Other special laboratories for household-arts instruction are also reported in the normal schools; four laundry laboratories, three emergency, first-aid, and home-nursing laboratories, one practice living room, and three laboratory rooms equipped as bedrooms. Finally three normal schools report a complete unit equipment for instruction in the form of model or, better, practice houses; while the Stevens Point (Wis.) Normal School is erecting a building for domestic science and art, to cost \$70,000, and in addition two cottages where senior students will live in groups of four from three to four weeks for their practice housekeeping.

Cost.—Fifty-nine public normal schools reported their cost of equipment for home-economics instruction, the cost ranging from \$100 to \$20,000. The median of the costs reported was \$1,000, and half the schools have equipments which cost between \$600 and \$2,000; 11 schools reported \$1,000 as the cost; 7 schools, \$1,500; 8 schools, \$2,000; and 7 schools, \$5,000 or more.

Section 4. COLLEGE EQUIPMENT FOR HOME ECONOMICS.

In response to the inquiry addressed to colleges, 83 such institutions report that they have special equipment for home-economics teaching; 59 report the cost of special laboratory equipment, the range of costs varying from \$75 to \$18,000, with the median cost \$1,150. This latter sum, therefore, may be taken as the cost of an average laboratory equipment for college instruction in home economics at present, though the expense for laboratories may be ten times that amount, without taking into account the construction of a special building. Of 15 colleges and universities reporting the cost of special home-economics buildings, the cost varies from \$5,500 to \$448,000, the latter the household arts building at Teachers College, Columbia University; the median cost is \$62,000 to \$70,000. From \$75,000 to \$200,000 probably better represents building costs in the State colleges and universities. Some of the figures may be quoted here: Kansas State College, building and equipment, \$83,000; Iowa State College, similarly, \$91,000; Michigan State College, \$105,300; New York State College, Cornell University, \$184,000. There are a number of buildings in the universities and State colleges either under construction or projected, at costs from \$100,000 to \$200,000. Copies of architects' blue-print plans of household science buildings can often be secured, at cost, by institutions planning new buildings.

Practice cottage, Denton, Tex.—A demonstration cottage at the college of industrial arts, Denton, Tex.; with five rooms—a living room, two bedrooms, dining room, kitchen, reception hall, back

hall with closet, bathroom—is occupied by senior students in groups of three, each group for three weeks. The students serve in turn as cook, assistant, and housekeeper, the work being under the supervision of the teachers of domestic science, one of them living in the cottage as chaperone. The cottage was furnished by the students at the following cost: Furniture rented, \$170; furniture loaned, \$25; draperies, rods, etc., \$25; linen loaned, \$25; silver loaned, \$25; glass loaned, \$3; stove and oven, \$21; other kitchen equipment, \$40; making a total of \$314.

Practice house, Winthrop College.—Winthrop Normal and Industrial College, at Rock Hill, S. C., has excellent provision for instruction in domestic art and science. A special feature of the equipment is a practice house on the college campus, secured at a cost of \$10,000, equipped to give senior students practice in every detail of housekeeping. Miss Bessie G. Chamberlayne, resident instructor in the practice house, furnishes the following description of the house and its use:

The practice house is furnished simply, the sitting room, hall, and instructor's office in mission furniture, with a few rugs of an inexpensive kind, several good pictures, photograph copies of the old masters. The furniture of the dining room is oak, cane-bottomed chairs, and a combination sideboard and china closet made by the college carpenter. The bedrooms are furnished with white iron beds, oak bureaus, tables, etc., similar to those used in the dormitories. In the kitchen there is a gas range, the gas for which is supplied by a gas machine placed in the cellar of the house.

Each member of the senior class has two periods of eight days each in the practice home. The girls make up their own groups, so that they may be a congenial set, and during the eight days live in the practice home with an instructor, going over to the other part of the college only for their classes, which are continued regularly. There is a schedule for the work during the day, and the eight girls are divided into cooks and housekeepers, the chief cook having control of the diningroom, kitchen, pantry, etc., with assistants under her. The chief housekeeper with her assistants has charge of the remainder of the house. Each knows her own duty for the day, so that there is no confusion and there is a system of progression under which each one in turn has each duty to perform, and when the eight days are over, each has completed the whole work of the house, including all the cleaning, sweeping, dusting, making beds, attending to lamps, arranging flowers for the table, care of plants and chickens. The menus are planned by the girls themselves; menus for every meal are written in a book, with costs for each item and for the meal as a whole, and the per capita cost. Twice during each period of eight days two guests (members of the faculty or visitors at Winthrop) are entertained at supper or at dinner on Sunday, and the chief cook and housekeeper are hostesses for that occasion and preside. The cook's two assistants serve the meal, simply rising from the table to do so, thus showing how a meal can be properly served where there is no maid. In connection with the practice home, there is a garden and chicken yard, and the care of the chickens is part of the daily duty. In time it is hoped to have an up-to-date laundry, with labor-saving devices, and also a dairy.

Dining room, H. Sophie Newcomb Memorial College.—The dining-room of the home economics department of the H. Sophie Newcomb Memorial College, Tulane University, New Orleans, La., was designed

and furnished by the students of the university. The furniture was designed by an art school senior, the electric dome and the china were created by the pottery department, and the linen and other furnishings came from students.

Cafeteria, Cornell University.—The home-economics building at Cornell University includes the cafeteria in the basement of the building, seating four or five hundred persons, which is administered as an integral part of the home-economics department. Students who wish to specialize in caring for large numbers have practice in providing food in quantity. The cafeteria thus serves as a practical laboratory in institutional management.

BULLETIN OF THE BUREAU OF EDUCATION.

[NOTE.—With the exceptions indicated, the documents named below will be sent free of charge upon application to the Commissioner of Education, Washington, D. C. Those marked with an asterisk (*) are no longer available for free distribution, but may be had of the Superintendent of Documents, Government Printing Office, Washington, D. C., upon payment of the price stated. Remittances should be made in coin, currency, or money order. Stamps are not accepted. Documents marked with a dagger (†) are out of print.]

1906.

- †No. 1. Education bill of 1906 for England and Wales as it passed the House of Commons. Anna T. Smith.
- †No. 2. German views of American education, with particular reference to industrial development. William N. Hallmann.
- *No. 3. State school systems: Legislation and judicial decisions relating to public education, Oct. 1, 1904, to Oct. 1, 1906. Edward C. Elliott. 15 cts.

1907.

- †No. 1. The continuation school in the United States. Arthur J. Jones.
- †No. 2. Agricultural education, including nature study and school gardens. James R. Jewell.
- †No. 3. The auxiliary schools of Germany. Six lectures by B. Maennel.
- †No. 4. The elimination of pupils from school. Edward L. Thorndike.

1908.

- †No. 1. On the training of persons to teach agriculture in the public schools. Liberty B. Bailey.
- *No. 2. List of publications of the United States Bureau of Education, 1867-1907. 10 cts.
- *No. 3. Bibliography of education for 1907.—James Ingersoll Wyer, Jr., and Martha L. Phelps. 10 cts.
- †No. 4. Music education in the United States; schools and departments of music. Arthur L. Manchester.
- *No. 5. Education in Formosa. Julian H. Arnold. 10 cts.
- *No. 6. The apprenticeship system in its relation to industrial education. Carroll D. Wright. 15 cts.
- *No. 7. State school systems: II. Legislation and judicial decisions relating to public education, Oct. 1, 1906, to Oct. 1, 1908. Edward C. Elliott. 30 cts.
- *No. 8. Statistics of State universities and other institutions of higher education partially supported by the State, 1907-8. 5 cts.

1909.

- *No. 1. Facilities for study and research in the offices of the United States Government in Washington. Arthur T. Hadley. 10 cts.
- *No. 2. Admission of Chinese students to American colleges. John Fryer. 25 cts.
- *No. 3. Daily meals of school children. Caroline E. Hunt. 10 cts.
- †No. 4. The teaching staff of secondary schools in the United States; amount of education, length of experience, salaries. Edward L. Thorndike.
- No. 5. Statistics of public, society, and school libraries in 1908.
- *No. 6. Instruction in the fine and manual arts in the United States. A statistical monograph. Henry T. Bailey. 15 cts.
- No. 7. Index to the Reports of the Commissioner of Education, 1867-1907.
- *No. 8. A teacher's professional library. Classified list of 100 titles. 5 cts.
- *No. 9. Bibliography of education for 1908-9. 10 cts.
- No. 10. Education for efficiency in railroad service. J. Shirley Eaton.
- *No. 11. Statistics of State universities and other institutions of higher education partially supported by the State, 1908-9. 5 cts.

1910.

- *No. 1. The movement for reform in the teaching of religion in the public schools of Saxony. Arley B. Shaw. 5 cts.
- No. 2. State school systems: III. Legislation and judicial decisions relating to public education, Oct. 1, 1908, to Oct. 1, 1909. Edward C. Elliott.
- †No. 3. List of publications of the United States Bureau of Education, 1867-1910.
- *No. 4. The biological stations of Europe. Charles A. Kofoid. 50 cts.
- †No. 5. American schoolhouses. Fletcher B. Dresslar.
- †No. 6. Statistics of State universities and other institutions of higher education partially supported by the State, 1909-10.

1911.

- *No. 1. Bibliography of science teaching. 5 cts.
- *No. 2. Opportunities for graduate study in agriculture in the United States. A. C. Monahan. 5 cts.
- *No. 3. Agencies for the improvement of teachers in service. William C. Ruediger. 15 cts.
- *No. 4. Report of the commission appointed to study the system of education in the public schools of Baltimore. 10 cts.
- *No. 5. Age and grade census of schools and colleges. George D. Strayer. 10 cts.
- *No. 6. Graduate work in mathematics in universities and in other institutions of like grade in the United States. 5 cts.
- †No. 7. Undergraduate work in mathematics in colleges and universities.
- †No. 8. Examinations in mathematics, other than those set by the teacher for his own classes.
- No. 9. Mathematics in the technological schools of collegiate grade in the United States.
- †No. 10. Bibliography of education for 1909-10.
- †No. 11. Bibliography of child study for the years 1908-9.
- †No. 12. Training of teachers of elementary and secondary mathematics.
- *No. 13. Mathematics in the elementary schools of the United States. 15 cts.
- *No. 14. Provision for exceptional children in the public schools. J. H. Van Sickle, Lightner Witmer, and Leonard P. Ayres. 10 cts.
- *No. 15. Educational system of China as recently reconstructed. Harry E. King. 15 cts.
- †No. 16. Mathematics in the public and private secondary schools of the United States.
- †No. 17. List of publications of the United States Bureau of Education, October, 1911.
- *No. 18. Teachers' certificates issued under general State laws and regulations. Harlan Updegraff. 20 cts.
- No. 19. Statistics of State universities and other institutions of higher education partially supported by the State, 1910-11.

1912.

- *No. 1. A course of study for the preparation of rural-school teachers. F. Mutchler and W. J. Craig. 5 cts.
- †No. 2. Mathematics at West Point and Annapolis.
- *No. 3. Report of committee on uniform records and reports. 5 cts.
- *No. 4. Mathematics in technical secondary schools in the United States. 5 cts.
- *No. 5. A study of expenses of city school systems. Harlan Updegraff. 10 cts.
- *No. 6. Agricultural education in secondary schools. 10 cts.
- No. 7. Educational status of nursing. M. Adelaide Nutting. 10 cts.
- *No. 8. Peace day. Fannie Fern Andrews. 5 cts. [Later publication, 1913, No. 12.]
- *No. 9. Country schools for city boys. William S. Myers. 10 cts.
- †No. 10. Bibliography of education in agriculture and home economics.
- †No. 11. Current educational topics, No. I.
- †No. 12. Dutch schools of New Netherland and colonial New York. William H. Kilpatrick.
- *No. 13. Influences tending to improve the work of the teacher of mathematics. 5 cts.
- *No. 14. Report of the American commissioners of the international commission on the teaching of mathematics. 10 cts.
- †No. 15. Current educational topics, No. II.
- *No. 16. The reorganized school playground. Henry S. Curtis.
- *No. 17. The Montessori system of education. Anna T. Smith. 5 cts.
- *No. 18. Teaching language through agriculture and domestic science. M. A. Lelper. 5 cts.
- *No. 19. Professional distribution of college and university graduates. Bailey B. Burritt. 10 cts.
- †No. 20. Readjustment of a rural high school to the needs of the community. H. A. Brown.
- †No. 21. Urban and rural common-school statistics. Harlan Updegraff and William R. Hood.
- No. 22. Public and private high schools.
- No. 23. Special collections in libraries in the United States. W. Dawson Johnston and Isadore G. Mudge.
- †No. 24. Current educational topics, No. III.
- †No. 25. List of publications of the United States Bureau of Education, 1912.
- †No. 26. Bibliography of child study for the years 1910-1911.
- No. 27. History of public-school education in Arkansas. Stephen B. Weeks.
- *No. 28. Cultivating school grounds in Wake County, N. C. Zebulon Judd. 5 cts.
- No. 29. Bibliography of the teaching of mathematics, 1900-1912. David Eugene Smith and Charles Goldsamer.
- No. 30. Latin-American universities and special schools. Edgar E. Brandon.
- No. 31. Educational directory, 1912.
- No. 32. Bibliography of exceptional children and their education. Arthur MacDonald.
- †No. 33. Statistics of State universities and other institutions of higher education partially supported by the State, 1912.

1913.

- No. 1. Monthly record of current educational publications, January, 1913.
- *No. 2. Training courses for rural teachers. A. C. Monahan and R. H. Wright. 5 cts.
- *No. 3. The teaching of modern languages in the United States. Charles H. Handachin. 15 cts.
- *No. 4. Present standards of higher education in the United States. George E. MacLean. 20 cts.
- *No. 5. Monthly record of current educational publications. February, 1913.

BULLETIN OF THE BUREAU OF EDUCATION.

III

- *No. 6. Agricultural instruction in high schools. C. H. Robinson and F. B. Jenks. 10 cts.
 - *No. 7. College entrance requirements. Clarence D. Kingsley. 15 cts.
 - *No. 8. The status of rural education in the United States. A. C. Monahan. 15 cts.
 - †No. 9. Consular reports on continuation schools in Prussia.
 - †No. 10. Monthly record of current educational publications, March, 1913.
 - †No. 11. Monthly record of current educational publications, April, 1913.
 - *No. 12. The promotion of peace. Fannie Fern Andrews. 10 cts.
 - *No. 13. Standards and tests for measuring the efficiency of schools or systems of schools. Report of the committee of the National Council of Education. George D. Strayer, chairman. 5 cts.
 - No. 14. Agricultural instruction in secondary schools.
 - †No. 15. Monthly record of current educational publications, May, 1913.
 - *No. 16. Bibliography of medical inspection and health supervision. 15 cts.
 - *No. 17. A trade school for girls. A preliminary investigation in a typical manufacturing city, Worcester, Mass. 10 cts.
 - *No. 18. The fifteenth international congress on hygiene and demography. Fletcher B. Dresslar. 10 cts.
 - *No. 19. German industrial education and its lessons for the United States. Holmes Beckwith. 15 cts.
 - *No. 20. Illiteracy in the United States. 10 cts.
 - †No. 21. Monthly record of current educational publications, June, 1913.
 - *No. 22. Bibliography of industrial, vocational, and trade education. 10 cts.
 - *No. 23. The Georgia club at the State Normal School, Athens, Ga., for the study of rural sociology. E. C. Branson. 10 cts.
 - *No. 24. A comparison of public education in Germany and in the United States. Georg Kerschensteiner. 5 cts.
 - *No. 25. Industrial education in Columbus, Ga. Roland B. Daniel. 5 cts.
 - †No. 26. Good roads arbor day. Susan B. Sipe.
 - †No. 27. Prison schools. A. C. Hill.
 - *No. 28. Expressions on education by American statesmen and publicists. 5 cts.
 - *No. 29. Accredited secondary schools in the United States. Kendrick C. Babcock. 10 cts.
 - *No. 30. Education in the South. 10 cts.
 - *No. 31. Special features in city school systems. 10 cts.
 - No. 32. Educational survey of Montgomery County, Md.
 - †No. 33. Monthly record of current educational publications, September, 1913.
 - *No. 34. Pension systems in Great Britain. Raymond W. Sies. 10 cts.
 - *No. 35. A list of books suited to a high-school library. 15 cts.
 - *No. 36. Report on the work of the Bureau of Education for the natives of Alaska, 1911-12. 10 cts.
 - No. 37. Monthly record of current educational publications, October, 1913.
 - *No. 38. Economy of time in education. 10 cts.
 - No. 39. Elementary industrial school of Cleveland, Ohio. W. N. Hallmann.
 - *No. 40. The reorganized school playground. Henry S. Curtis. 10 cts.
 - No. 41. The reorganization of secondary education.
 - No. 42. An experimental rural school at Winthrop College. H. S. Browne.
 - *No. 43. Agriculture and rural-life day; material for its observance. Eugene C. Brooks. 10 cts.
 - *No. 44. Organized health work in schools. E. B. Hoeg. 10 cts.
 - No. 45. Monthly record of current educational publications, November, 1913.
 - *No. 46. Educational directory, 1913. 15 cts.
 - *No. 47. Teaching material in Government publications. F. K. Noyes. 10 cts.
 - *No. 48. School hygiene. W. Carson Ryan, Jr. 15 cts.
 - No. 49. The Farragut School, a Tennessee country-life high school. A. C. Monahan and Adams Phillips.
 - No. 50. The Fitchburg plan of cooperative industrial education. M. R. McCann.
 - *No. 51. Education of the immigrant. 10 cts.
 - *No. 52. Sanitary schoolhouses. Legal requirements in Indiana and Ohio. 5 cts.
 - *No. 53. Monthly record of current educational publications, December, 1913.
 - No. 54. Consular reports on industrial education in Germany.
 - No. 55. Legislation and judicial decisions relating to education, October 1, 1909, to October 1, 1912. James C. Boykin and William R. Hood.
 - †No. 56. Some suggestive features of the Swiss school system. William Knox Tate.
 - No. 57. Elementary education in England, with special reference to London, Liverpool, and Manchester. I. L. Kandel.
 - No. 58. Educational system of rural Denmark. Harold W. Foght.
 - No. 59. Bibliography of education for 1910-11.
 - No. 60. Statistics of State universities and other institutions of higher education partially supported by the State, 1912-13.
- 1914.
- *No. 1. Monthly record of current educational publications, January, 1914. 5 cts.
 - No. 2. Compulsory school attendance.
 - No. 3. Monthly record of current educational publications, February, 1914.
 - No. 4. The school and the start in life. Meyer Bloomfield.

IV

BULLETIN OF THE BUREAU OF EDUCATION.

- No. 5. The folk high schools of Denmark. L. L. Frikund.
- No. 6. Kindergartens in the United States.
- No. 7. Monthly record of current educational publications, March, 1914.
- No. 8. The Massachusetts home-project plan of vocational agricultural education. R. W. Stimson.
- No. 9. Monthly record of current educational publications, April, 1914.
- *No. 10. Physical growth and school progress. B. T. Baldwin. 25 cts.
- No. 11. Monthly record of current educational publications, May, 1914.
- No. 12. Rural schoolhouses and grounds. F. B. Dresslar.
- No. 13. Present status of drawing and art in the elementary and secondary schools of the United States. Royal B. Farnum.
- No. 14. Vocational guidance.
- No. 15. Monthly record of current educational publications. Index.
- No. 16. The tangible rewards of teaching. James C. Boykin and Roberta King.
- No. 17. Sanitary survey of the schools of Orange County, Va. Roy K. Flannagan.
- No. 18. The public school system of Gary, Ind. William P. Burris.
- No. 19. University extension in the United States. Louis E. Reber.
- No. 20. The rural school and bookworm disease. J. A. Ferrell.
- No. 21. Monthly record of current educational publications, September, 1914.
- No. 22. The Danish folk high schools. H. W. Foght.
- No. 23. Some trade schools in Europe. Frank L. Glynn.
- No. 24. Danish elementary rural schools. H. W. Foght.
- No. 25. Important features in rural school improvement. W. T. Hodges.
- No. 26. Monthly record of current educational publications, October, 1914.
- No. 27. Agricultural teaching.
- No. 28. The Montessori method and the kindergarten. Elizabeth Harrison.
- No. 29. The kindergarten in benevolent institutions.
- No. 30. Consolidation of rural schools and transportation of pupils at public expense. A. C. Monahan.
- No. 31. Report on the work of the Bureau of Education for the natives of Alaska.
- No. 32. Bibliography of the relation of secondary schools to higher education. R. L. Walkley.
- No. 33. Music in the public schools. Will Earhart.
- No. 34. Library instruction in universities, colleges, and normal schools. Henry R. Evans.
- No. 35. The training of teachers in England, Scotland, and Germany. Charles H. Judd.